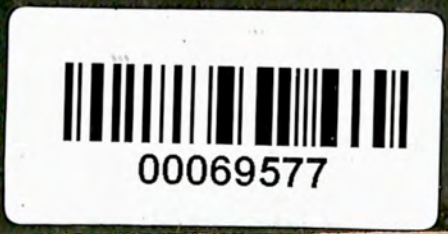
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LOGIC FOR THE MILLION:

A Familiar Exposition

OF

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THE ART OF REASONING.

BY

A FELLOW OF THE ROYAL SOCIETY.

LONDON:
LONGMAN, BROWN, GREEN & LONGMANS.
1851.

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PREFACE.

I HAVE called this book, LOGIC FOR THE MILLION. By this title, I mean that here the Art of Reasoning is explained in such a way as to be readily understood even by those men and women who have not had the advantage of a literary education.

The imperfection of the existing works on Logic, as means of popular instruction, is thus stated by Mr. Blakey :—

"There seem to be two principal causes which render modern systems of logic both tiresome and comparatively useless; and these are, first, the employment of a vast number of the old scholastic terms and phrases, derived from logicians of former times, which throw over the art such an air of difficulty and perplexity, that the reader, before he has well entered upon the study of his subject, is worn out by the mere pressure of uncouth words, and is glad to make his retreat from such an irksome task with all possible expedition. The second cause, and one which is by far the most important, is, that our common books of logic may be said rather to treat of metaphysical systems than to unfold those rules, precepts, and suggestions, which are instrumental in directing the judgment to right conclusions on the various important subjects with which it is necessary that man should be well acquainted. The generality of the books here alluded to,

have been founded upon the principle, that before we could exercise our reasoning powers with energy and effect,—before we could form right notions, and give method and consistency to our conceptions,—it was absolutely necessary that we should be expert metaphysicians, should be acquainted with all the mental speculations of the day, and intimately and familiarly conversant with the anatomy and physiology of our own minds. But this, I apprehend, is a radical error in our common treatises on logic."

The first cause refers to scholastic logic, the second to metaphysical logic.

Metaphysical logic consists in the knowledge of the nature of those powers of the mind which are exercised in the act of reasoning. This subject is not discussed in the following pages. It does not appear to me that this metaphysical knowledge is at all necessary to the art of reasoning. The analogy between the body and the mind seems to hold good in this case. Dancing is an act of the body. Reasoning is an act of the mind. As it is not necessary to understand the anatomy of the body in order to dance well, so it is not necessary to understand the anatomy of the mind in order to reason well. The study of metaphysical science seems rather to teach the art of doubting than the art of reasoning. By this kind of study, Berkeley was led to doubt the existence of matter, and Hume that of mind. "No man," observes Mr. Blakey, "appears more unfit for argumentative discussion, on the common and every-day topics which engage the attention of men of the world, than the profound thinker or the man of mental abstraction. His power of mental analysis is too refined for objects of a formidable and gigantic nature; and when he comes out into common life to measure his strength with the rustic minds around him, he too often finds, to his great mortification, that he is worsted and driven from

the field by the athletic vigour of those who know nothing but what Nature has taught them about the abstract nature of mind or the recondite rules of mental philosophy."

"The vast number of old scholastic terms and phrases," refer to the scholastic system of logic. The advocates of that system still contend for the use of a technical language. It has been a great hindrance to popular education, that as soon as any branch of knowledge is exalted into a science, it is surrounded by a number of uncouth words, the understanding of which is more difficult than the understanding of the science. The practice of using hard words to denote common things was ridiculed in "Butler's Hudibras," with reference to the rhetoricians, and the ridicule will apply with equal justice to the scholastic logicians :—

"For rhetoric, he could not ope'
His mouth but out there flew a trope;
And when he happen'd to break off
I' the middle of his speech, or cough,
He 'd *hard words* ready to show why,
And tell what *rules* he did it by;
Else, when with greatest art he spoke,
You 'd think he talk'd like other folk;
For all the rhetorician's rules
Teach nothing but to *name his tools*."

It would be tedious to enumerate all the particulars in which the system of logic described in this work differs from the other systems now before the public; and to those of my readers who are acquainted with those systems the comparison is unnecessary; while to those who are not acquainted with them, it would not be understood.

In one respect the difference will be obvious—that is, in the character and number of my illustrations. I have not copied from other logical works trivial and fictitious examples, capable of no practical application. My illustrations have been gathered by myself from authors of established reputation, and are generally upon subjects of great public or private interest. I have taken most of my quotations from the Bible, from books on political economy, and from newspapers; others from books referring to the ordinary affairs of life—chiefly to health, education, and conduct. I have not stopped to examine whether I do or do not concur in all the sentiments they express. I adduce them as illustrations of reasoning; though I believe they will generally be found also to be otherwise useful. Some have been selected because they are entertaining; others, because they teach lessons of still higher importance than even the art of reasoning.

Those portions of the scholastic system that I have thought proper to adopt, I have described in the language of Dr. Watts. From his "Logic," and from his "Improvement of the Mind," I have also taken some excellent instructions for training the judgment into habits of correct reasoning. But in no case have I borrowed without acknowledgment. When I have taken a writer's thoughts, I have taken his words too, and have given the name of the author. I have done unto others as I should wish others to do unto me.

Let no one commence the reading of this book under the impression that he is about to engage in an exercise that is dry, toilsome, or difficult. He will not find it so. Here are no intricate theories in which the reader may become bewildered—no knotty questions by which he may be embarrassed—no hard words which he cannot understand—no ill-natured censure of preceding

writers to awaken his resentment—and no gloomy reflections to render him either sulky or morose. The road before him is a wide and easy path, in which he may walk pleasantly along, gathering amusement and instruction by the way; and now and then he will be invited to repose, that he may look around him, and indulge in feelings of useful merriment.

I have not placed my name on the front of this book. Though not unknown as an author, I am not known as a writer on logic; and I am unwilling that the present work should receive either advantage or disadvantage from any reputation I may have acquired by other publications. I wish its acceptance by the public to depend entirely upon its own merits.

THE AUTHOR.

LONDON, *May* 1*st*, 1851.

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LOGIC FOR THE MILLION.

You are informed, gentle reader, that this book is written upon the Art of Reasoning, and is divided into Five Parts. The First Part treats of the INTRODUCTION TO REASONING; the Second and Third Parts treat of the PRINCIPLES OF REASONING; the Fourth Part treats of the FORMS OF REASONING; and the Fifth Part treats of the APPLICATIONS OF REASONING.

PART I.

THE INTRODUCTION TO REASONING.

It seems proper that before we attempt to reason, we should understand something of the Name and Nature of the Art of Reasoning—of the Subjects on which we Reason—of the Utility of Reasoning—of the Disposition of Mind we should possess while engaged in Reasoning—and of the Information that we should previously acquire. These several topics will therefore form the subjects of the five following Sections, which, taken together, are called "An Introduction to the Art of Reasoning."

SECTION I.

THE NAME AND NATURE OF THE ART OF REASONING.

THE art of reasoning is called Logic. But you know Shakspeare has said—

"What we call a Rose,
By any other name would smell as sweet."

In the present case we have no occasion for any name. We might simply say the Art of Reasoning. In the same way we say the art of nursing, the art of teaching, the art of dancing, or the art of fencing. Had either of these arts a Greek name, a writer would begin his treatise with stating the meaning of this name; and probably learned men would differ as to the propriety and extent of its application.

There is, however, a convenience in giving distinct names to distinct branches of knowledge. But we must have a care of supposing that because an art or a science has got a hard name, that there is something very difficult in the art or science itself. Many of our arts and sciences were taught by the Greeks, and when our learned men first wrote upon them in English, they very naturally called them by their Greek names. Thus, the word logic is derived from a Greek word (logos) that signifies discourse. But these words have no natural connexion with the arts and sciences to which they are applied. You will have made no unimportant step in a knowledge of the art of reasoning, when you at all times recollect that the names of things are quite distinct from the things themselves. All the processes of reasoning can be as clearly described in "Household Words" as in those Greek words in which they are usually expounded. To reason clearly and forcibly, it is not necessary that you should understand any other language than your own.

"Argumentation or reasoning," says Dr. Watts, "is that operation of the mind, whereby we infer one thing, that is, one proposition, from two or more propositions premised. Or it is the drawing a conclusion, which before

was either unknown, or dark, or doubtful, from some propositions which are more known and evident. So when we have judged that *matter cannot think*, and that the mind *of man doth think*, we then infer and conclude, that *therefore the mind of man is not matter.*

"So we judge that *a just governor will make a difference between the evil and the good;* we judge also that God is *a just governor;* and from thence we conclude, that *God will make a difference between the evil and the good.*

"This argumentation may be carried on further, thus, *God will one time or another make a difference between the good and the evil;* but *there is little or no difference made in this world;* therefore *there must be another world wherein this difference shall be made.*

"These *inferences* or *conclusions* are the effects of reasoning, and the three propositions taken all together are called a *syllogism* or *argument.*"

"Archbishop Whately," observes Mr. Mill, "has defined logic to be the science as well as the art of reasoning, meaning by the former term the analysis of the mental process which takes place whenever we reason; and by the latter the rules grounded upon that analysis for conducting the process correctly.

"Logic then comprises the science of reasoning, as well as an art founded on that science. But the word reasoning, like most other scientific terms in popular use, abounds in ambiguities. In one of its acceptations it means syllogising; in another of its senses, to reason is simply to infer any assertion from assertions already admitted. The latter and more extensive signification is that in which I mean to use it.

"Our object will be to attempt a correct analysis of the intellectual process called reasoning or inference, and of such other mental operations as are intended to facilitate this, as well as on the foundation of this analysis, and *pari passu* with it, to bring together or frame a set of rules or canons for testing the sufficiency of any given evidence to prove any given proposition."

The reader will perceive that Mr. Mill's book is written on the *science* of reasoning. Our book is written on the *art* of reasoning. We use the word reasoning in the

wider sense used by Mr. Mill, and as including what is denoted by arguing, proving, inferring, confirming, refuting, and all similar words, in the sense in which they are popularly understood. A knowledge of the art of reasoning is essential to the study of the science; but an acquaintance with the science is not necessary to the practice of the art. Indeed it is only by the use of the art that the science can be studied. We meddle not with the science. We profess not to analyse any of the powers of the mind, nor to lay down any new rules for conducting the process of reasoning. We shall attempt only to describe those rules that are already known, and to apply them correctly. And we shall consider their application chiefly with reference to those things with which people are most familiar.

If a man who understands grammar hear a person say, "I speaks," he will know, from general practice, that the language is improper; but he will, moreover, quote the rule, that "a verb should agree with its nominative case in number and person." Now, a collection of such rules form grammar, or the art of speaking correctly. So, if a man hear a person say—"All men are liars, for a party has just told me a lie," he will know from his own common sense that this is not sound reasoning; but if he has studied logic, he will also cite the rule, "Universals cannot be inferred from particulars." Now, a collection of all these rules form logic, or the art of reasoning correctly; and the man who has a knowledge of these rules, and is correct and ready in applying them in practice, is called a logician. A man may reason accurately without rules. But if he can give the rules, he will have more confidence in the truth of his reasonings, and be better able to perceive the incorrect reasonings of others, and to show the soundness or unsoundness of any opinions propounded for his consideration.

These practical rules of reasoning collected together form the art of reasoning, in the same way as a collection of rules for speaking and writing with propriety form the art of speaking and writing with propriety. The one art is called logic—the other art is called grammar. These two arts are useful to each other. Thoughts are expressed in words. If we think clearly we shall speak clearly; and

when we are learning to arrange our words with accuracy and order, we are learning to think with accuracy and order.

A person who has acquired a knowledge of grammar will afterwards speak and write grammatically, without ever thinking of the rules of grammar. So a person who has acquired a knowledge of logic, will afterwards reason logically, without ever thinking of the rules of logic. The rules will have become so deeply fixed in his mind, that he will habitually reason accurately; and by practice he will come to reason promptly and forcibly. It is the chief business both of grammar and logic to teach us how to avoid errors. Grammar teaches us how to avoid the use of words and sentences that are contrary to its rules. But a beautiful or powerful style of writing must arise from the constitution of our own minds, or the peculiar direction of our studies, and is not to be acquired merely by an observance of grammatical construction. So logic teaches how to know and to discard bad arguments. To be able to reason promptly and forcibly, depends upon our attainments in knowledge—the constitution of our mental powers—the extent of our practice—and the degree with which we are familiar with the writings of those learned men who are celebrated as the masters of the art of reasoning. Dr. Campbell, in his Philosophy of Rhetoric, compares logic to the soul, and grammar to the body; the union of both being essential to an excellent discourse.

SECTION II.

THE SUBJECTS OF THE ART OF REASONING.

THE human mind can think, can reason, can remember. How it performs these operations we do not know. It does perform them, that's certain. 'Tis equally certain that these operations are distinct from each other. The mind may think of things without reasoning about them; and it may remember things without reasoning about them. We shall in this section take a view of those truths with which we become acquainted by other means than reasoning. They may be classed into truths of the senses—truths of consciousness—truths of the intellect—and

truths of testimony. On these topics we shall quote Dr. Watts.

1. Truths of the senses :—

"*The evidence of sense* is, when we frame a proposition according to the dictates of any of our senses; so we judge that *grass is green;* that a *trumpet gives a pleasant sound;* that *fire burns wood; water is soft; and iron is hard;* for we have seen, heard, or felt all these. It is upon this evidence of sense that we know and believe the daily occurrences in human life; and almost all the histories of mankind, that are written by eye or ear-witnesses, are built upon this principle.

"Under the evidence of sense we do not only include that knowledge which is derived to us by our outward senses of *hearing, seeing, feeling, tasting,* and *smelling;* but that also which is derived from the inward sensations and appetites of *hunger, thirst, ease, pleasure, pain, weariness, rest,* &c. and all those things which belong to the body; as, *hunger is a painful appetite; light is pleasant; rest is sweet to the weary limbs.*"

2. Truths of consciousness :—

"As we learn what belongs to the body by the *evidence of sense,* so we learn what belongs to the soul by an *inward consciousness,* which may be called a sort of *internal* feeling, or spiritual sensation of what passes in the mind; as, *I think before I speak; I desire large knowledge; I suspect my own practice; I studied hard to-day; my conscience bears witness of my sincerity; my soul hates vain thoughts; fear is an uneasy passion; long meditation on one thing is tiresome.*

"Thus it appears that we obtain the knowledge of a multitude of propositions, as well as of single ideas, by those two principles which Mr. Locke calls *sensation* and *reflection;* one of them is a sort of *consciousness* of what *affects* the body, and the other is a *consciousness* of what *passes* in the mind."

3. Truths of the intellect :—

"*Intellect* relates chiefly to those abstracted propositions which carry their own evidence with them, and admit no doubt about them. Our perception of this *self-evidence* in any proposition is called *intelligence.* It is our knowledge of those first principles of truth which are, as it were, wrought into the very nature and make of our minds: they are so evident in themselves to every man who attends to them, that they need no proof. It is the prerogative and peculiar excellence of these propositions, that they can scarce ever be proved or denied: they cannot easily be *proved,* because there is nothing supposed to be more clear or certain, from which an argument may be drawn to prove them.

They cannot well be *denied*, because their own evidence is so bright and convincing, that, as soon as the terms are understood, the mind necessarily assents; such are these, *whatsoever acted hath a being; nothing has no properties; a part is less than the whole; nothing can be the cause of itself.*

"These propositions are called *axioms* or *maxims*, or *first principles;* these are the very foundations of all improved knowledge and reasonings, and on that account these have been thought to be *innate propositions*, or truths born with us."

4. Truths of testimony:—

"When we derive the evidence of any proposition from the *testimony* of others, it is called the *evidence of faith;* and this is a large part of our knowledge. Ten thousand things there are which we believe merely upon the authority or credit of those who have spoken or written of them. It is by this evidence that we know *there is such a country as China*, and *there was such a man as Cicero, who dwelt in Rome.* It is by this that most of the transactions in human life are managed: we know our parents and our kindred by this means, we know the persons and laws of our present governors, as well as things that are at a vast distance from us in foreign nations, or in ancient ages.

"According as the persons that inform us of anything are many or few, or more or less wise, and faithful, and credible, so our faith is more or less firm or wavering, and the *proposition believed* is either certain or doubtful; but in matters of *faith*, an exceeding great probability is called a *moral certainty.*"

The truths of reasoning are distinct from all these. They are derived from these truths, or such as these, by natural and just methods of argumentation.

As logic is the art of reasoning it has nothing to do with those truths that are self-evident, or which are known to be true without reasoning. The positive testimony of the senses supersedes the necessity for reasoning. If you have the tooth-ache or the gout, you want no logic to prove to you that you suffer pain. And as we know what passes without us, by the organs of hearing and seeing—and what passes in our bodies, by means of our sensations—so we know what passes in our minds, by means of consciousness. We know that we think—that we judge—that we remember. We know that we hope and we fear—we love and we hate. All these, and a variety of other operations and feelings, pass within our minds; and we want no logic to convince us of their existence. There are also many other

truths that are self-evident. We know that two and two make four—that a part of any thing is less than the whole—that a cause must precede the effect—and that a proposition cannot be both true and not true at the same time, and in the same respect. These are called *first* truths, or truths of intuition. They are wrought into our very nature, and we cannot disbelieve them, if we would. If we meet a man who denies them, we do not reason with him. We conclude either that he does not understand the meaning of the words, or that he has lost his reasoning faculties.—Here logic has nothing to do.

As logic is merely the art of reasoning, it follows that logic has nothing to do with those mental operations in which we do not reason. The mere giving or receiving of information is not reasoning. If you say to a friend, "It is a cold day," there is no logic in that. But if you say, "I think we shall have rain in the course of the day," that is a logical conclusion; and if asked to do so, you should be prepared to give reasons for your opinion. So the acquisition of knowledge by reading or hearing is not reasoning. You may possibly read history or biography, learn several languages, and become acquainted with botany, natural history, and several sciences, without reasoning. All this requires nothing more than a good memory. And hence it is possible to become a very learned man and yet not be a logician. But if you begin to reason about any thing you learn, you immediately become a logician. Take, for illustration, a case in history. You have read the life of Napoleon Bonaparte, and you remember all the events recorded, and also the opinions of the historian. You are no logician here. But if you stop to ask if any particular event be true—if you inquire whether in certain actions he evinced sagacity or courage—and consider what were the effects of his course on the state of Europe—as soon as you commence to discuss these or any similar questions, you become a logician.

As logic has nothing to do with receiving or retaining information, so also it has nothing to do with imparting information, or with the giving of advice or commands. There is no logical process in the following words—"Be not wise in your own conceit—Recompense to no man evil for evil—Provide things honest in the sight of all

men—If it be possible, as much as in you lieth live peaceably with all men—Be not overcome of evil, but overcome evil with good."—But sometimes the terms, though simply the language of advice or command, will imply a logical process: thus—"Go to the ant, thou sluggard; consider her ways and be wise," which implies that there is some connexion between going to the ant and becoming wise; and thus it denotes a logical process in the mind of the speaker. So also, if a motive is added, this brings the command or advice within the province of logic: thus—"Honour thy father and thy mother, that thy days may be long in the land"—"Honour the Lord with thy substance, and with the first-fruits of all thine increase; so shall thy barns be filled with plenty, and thy presses shall burst out with new wine."

Logic has no province of its own. If you reason at all, you must reason about something, and that something may belong to any one of the arts or sciences. There is no object in nature, nor any fact in history, but what may become a subject of argument. Thus, while logic as an art has no domain of its own, it has a province in every other domain—or rather, it is called in whenever necessary to settle disputes and exercise supremacy in all the other departments of human knowledge. A judge on Circuit has no property in the county in which he administers justice, nor any authority over its population. But should any estates in the county become the subject of litigation, or any person become a party in a civil or criminal proceeding, then are they immediately brought under his jurisdiction. So whenever any difference in opinion arises either in the arts and sciences or in ordinary life, it is the province of logic to adjust the dispute. Thus every object in nature, every feeling of the mind, and every event in history, may become connected with a logical process. We will illustrate this by a few examples.—

Take a flower:—

"Consider the lilies of the field, how they grow; they toil not, neither do they spin: and yet I say unto you, that even Solomon in all his glory was not arrayed like one of these. Wherefore, if God so clothe the grass of the field, which to-day is, and to-morrow is cast into the oven, shall he not much more clothe you, O ye of little faith?"—*Matt.* vi. 28—30.

Take social relations:—

"If ye then, being evil, know how to give good gifts unto your children, how much more shall your Father which is in heaven give good things to them that ask him?"—*Matt.* vii. 11.

"He that loveth not his brother whom he hath seen, how can he love God whom he hath not seen?"—1 *John* iv. 20.

Take historical events:—

"Now these things were our examples, to the intent we should not lust after evil things, as they also lusted. Neither be ye idolaters, as were some of them; as it is written, The people sat down to eat and drink, and rose up to play. Neither let us commit fornication, as some of them committed, and fell in one day three and twenty thousand. Neither let us tempt Christ, as some of them also tempted, and were destroyed of serpents. Neither murmur ye, as some of them also murmured, and were destroyed of the destroyer. Now all these thing happened unto them for ensamples: and they are written for our admonition, upon whom the ends of the world are come. Wherefore let him that thinketh he standeth take heed lest he fall."—1 *Cor.* x. 6—12.

SECTION III.

THE UTILITY OF THE ART OF REASONING.

ALL men and women reason from their infancy. 'Tis as natural for them to do so as it is for dogs to bark or birds to sing. And when they reason about things they understand, they generally reason well. But sometimes they reason ill; and 'tis the business of the art of reasoning to show them when they reason ill, and to teach them how to reason well. Such an art cannot be otherwise than useful. It must be useful to know how to do *well* anything we have to do every day and several times a-day. And when we recollect that much of our health, our success in business, our moral and religious character, our present and future happiness, our reputation in the world, and our usefulness to others, will depend upon the soundness of our reasonings, the art will appear to us to be of very high importance. We shall point out a few respects in which it is useful:—

I. The art of reasoning is useful by enabling us to form

our own judgments. You talk, of course, about a great many things. You talk about yourself; about your friends, and relations, and acquaintances; about your trade and profession; about the accidents and offences you read of in the newspaper; about public measures and public men; about France, and Russia, and America, and other nations with whom we may be, or expect to be at war; about right and wrong; justice and injustice; wealth and poverty; slavery and liberty; and on Sundays, if not on other days, you will talk about religion, or at least about the pope and the Church, and the parson, and about people who are supposed to be religious. Now, upon all these subjects, and a variety of others, you will probably give opinions, and most likely very correct opinions, provided you talk only of what you understand. But to guard against giving incorrect or unguarded opinions, you may as well take a lesson or two upon the right way of reasoning.

You will say that you can do all this without the aid of logic. So you can. But logic will teach you how to do it better. Logic will teach you that you must form your opinions by reason alone, without any bias from your passions or feelings. Logic will teach you that you must be able to give a reason for all the opinions you entertain. Logic will teach you that you must look at both sides of the question, and examine the arguments that can be advanced against any opinion as well as those that may be advanced in its favour; and that you must weigh these arguments, and see which side preponderates. Logic will teach you that after having done this, you must be ready to admit any new facts or arguments that may appear on either side of the question. In these various ways a knowledge of the art of reasoning will be useful to yourself.

By thus examining the reasons for your opinions you will soon learn to distinguish between good reasons and bad ones. You will get into the practice of using good reasons and discarding bad ones. You will thus acquire the habit of reasoning well, and when assailed with bad reasons you will know how to refute them.

II. The Art of Reasoning is useful in teaching us how to give instruction and advice to others. You will have occasion to give instruction or advice to others. You will

often have occasion to do this in your family. But, besides, you may be a director in a public company, or on the committee of a charitable institution, or may be consulted by your friends in cases of emergency. In all these positions it is desirable you should be able to give good advice, and to enforce it by reasonable considerations. You know that the counsel of Ahithophel was so highly esteemed that it was as if a man had inquired at the oracle of God, (2 Sam. xvi. 23,) and doubtless you have known men who, though not gifted with eloquence or talent, have yet been so remarkable for soundness of judgment that they have been treated with universal respect. If you accustom yourself to reason well when forming your own opinions, you will insensibly acquire the habit of reasoning well when stating those opinions to other people.

III. The Art of Reasoning is useful by enabling us to defend our own principles against the attacks of opponents, and to give them currency in the world. You may have to defend your opinions against the attacks of those who hold contrary opinions. You must not hesitate to do this when the cause of truth or of justice requires it. When your own character or that of your friends, or your political or religious principles are assailed, you are bound to make resistance, and it will be useful to be able to do it well. The political and religious differences that exist among mankind are by no means to be deplored as unmingled evils. They serve to awaken the nobler feelings of the soul, and to maintain attention to principles that might otherwise be forgotten. They stimulate the intellectual powers, and impart an energy to all the faculties and to all the operations of the mind. To engage in controversy does not imply that you are to vituperate the person, misrepresent the opinions, or calumniate the character of your opponents. You will be less liable to fall into these practices if you understand the art of reasoning. You will then have no occasion for these ignoble weapons. — You will be conscious that the force of truth and the power of logic will have much greater effect in discomfiting your antagonists.

"A dispute," says Mr. Robinson, "is an oral controversy, and

a controversy is a written dispute. To controvert or dispute a point, either by word or writing, is only to agitate a question in order to obtain clear ideas of it. Can it be admitted that religion does not admit of this? The whole of the Jewish religion was a controversy against heathenism. The writings of prophets are eminently argumentative. The book of Job is a controversy. St. Paul's Epistles are most of them controversial. The Apostles arrived at truth by means of *much disputing* among themselves (Acts xv. 7.) And they convinced the Jews and the Gentiles by *disputing* with both. (Acts xvii. 17; xix. 8.) Every article of religion is denied by some, and cannot be believed without examination and discussion by any. Religion authorizes us to investigate, debate, dispute, and controvert each article, in order to ascertain its evidence." *

IV. The art of reasoning is useful by strengthening the memory and systematizing our knowledge :—

"Memory may be wonderfully strengthened," says Sidney Smith, "by referring single facts and observations to one simple principle, and by these means we can either remember the principle by remembering the fact, or the fact by remembering the principle. Thus, if we were to prove that democracy leads to despotism, we may refer to Julius Cæsar, Cromwell, and Bonaparte. France has fallen under the dominion of a single man, so did Rome, so have innumerable free countries; the cause in many instances has been precisely the same—that anarchy which has been produced by the licentiousness of the people, and which has rendered them an easy prey to the first ambitious man who could ingratiate himself with the army. Such examples are very trite, and what may occur to any one. I only mention them to illustrate the importance of philosophical arrangement to memory, and to show how much more likely facts are to reappear when we want them, if we have clustered numbers of them together as illustrative of a simple principle, than if they are promiscuously scattered through the understanding without any such connecting tie." †

V. The art of reasoning is useful by tending to prevent those evils that arise from the passions or the imagination obtaining an ascendancy over the judgment.

"The registers of the Bicêtre, for a series of years, show that even when madness affects those who belong to the educated classes, it is chiefly seen in those whose education has been imperfect or irregular, and very rarely indeed in those whose minds have been fully, equally, and systematically exercised. Priests, artists, painters, sculptors, poets and musicians, whose professions

* Notes to Claude's Essay on the Composition of a Sermon.
† Elementary Sketches of Moral Philosophy.

so often appear marked in that register, are often persons of very limited or exclusive education; their faculties have been unequally exercised; they have commonly given themselves up too much to imagination, and have neglected comparison, and have not habitually exercised the judgment. Even of this class it is to be remembered that it is commonly those of the lowest order of the class, in point of talent, who become thus affected: whilst of naturalists, physicians, chemists and geometricians, it is said not one instance occurs in these registers. If one go from individual to individual in any lunatic establishment, and investigate the character and origin of the madness of each, we shall find for every one who has become insane from the exercise of his mind, at least a hundred have become insane from the undue indulgence of their feelings. Those men who really most exercise the faculties of their minds, meaning thereby all their faculties, their attention, reflection, or comparison, as well as their imagination and memory, are least liable to insanity. An irregular and injudicious cultivation of poetry and painting has often concurred to produce madness, but nothing is rarer than to find a mad mathematician: for, as no study demands more attention than mathematics, so it secures the student, during a great part of his time, from the recurrence of feelings which are always the most imperious in those who are the least occupied." *

VI. The Art of Reasoning is useful, as it will not only give method and system to our own habits, but it will, by the force of example, enforce corresponding modes of thinking and acting on those around us. And thus their reasonings will often be useful in return to ourselves:—

It is useful to a husband to have a logical wife.

"But the angel of the Lord did no more appear to Manoah and to his wife. Then Manoah knew that he was an angel of the Lord. And Manoah said unto his wife, We shall surely die, because we have seen God. But his wife said unto him, If the Lord were pleased to kill us, he would not have received a burnt-offering and a meat-offering at our hands, neither would he have showed us all these things, nor would as at this time have told us such things as these."—*Judges* xiii. 21—23.

It is useful to a wife to have a logical husband.

"Then said his wife unto him, Dost thou still retain thine integrity? curse God, and die. But he said unto her, Thou speakest as one of the foolish women speaketh. What? shall we receive good at the hand of God, and shall we not receive evil?"—*Job* ii. 9, 10.

* On Man's Power over himself to prevent or control Insanity. (Pickering.)

It is useful to a master to have logical servants.

"Now Naaman, captain of the host of the king of Syria, was a great man with his master, and honourable, because by him the Lord had given deliverance unto Syria: he was also a mighty man in valour, but he was a leper. . . . . So Naaman came with his horses and with his chariot, and stood at the door of the house of Elisha. And Elisha sent a messenger unto him, saying, Go and wash in Jordan seven times, and thy flesh shall come again to thee, and thou shalt be clean. But Naaman was wroth, and went away, and said, Behold, I thought, He will surely come out to me, and stand, and call on the name of the Lord his God, and strike his hand over the place, and recover the leper. Are not Abana and Pharpar, rivers of Damascus, better than all the waters of Israel? may I not wash in them, and be clean? So he turned and went away in a rage. And his servants came near, and spake unto him, and said, My father, if the prophet had bid thee do some great thing, wouldst thou not have done it? how much rather then, when he saith to thee, Wash, and be clean? Then went he down, and dipped himself seven times in Jordan, according to the saying of the man of God: and his flesh came again like unto the flesh of a little child, and he was clean."—2 *Kings* v. 1, 9—14.

It is useful to servants to have a logical master.

"Ye call me Master and Lord: and ye say well; for so I am. If I then, your Lord and Master, have washed your feet; ye also ought to wash one another's feet. For I have given you an example, that ye should do as I have done to you."—*John* xiii. 13—15.

It is useful to public bodies to have logical advisers.

"Then stood there up one in the council, a Pharisee, named Gamaliel, a doctor of the law, had in reputation among all the people, and commanded to put the apostles forth a little space; and said unto them, Ye men of Israel, take heed to yourselves what ye intend to do as touching these men. For before these days rose up Theudas, boasting himself to be somebody; to whom a number of men, about four hundred, joined themselves: who was slain; and all, as many as obeyed him, were scattered, and brought to nought. After this man rose up Judas of Galilee in the days of the taxing, and drew away much people after him: he also perished; and all, even as many as obeyed him, were dispersed. And now I say unto you, Refrain from these men, and let them alone: for if this counsel or this work be of men, it will come to nought: but if it be of God, ye cannot overthrow it; lest haply ye be found even to fight against God."—*Acts* v. 34—39.

"And when the town-clerk had appeased the people, he said,

Ye men of Ephesus, what man is there that knoweth not how that the city of the Ephesians is a worshipper of the great goddess Diana, and of the image which fell down from Jupiter? Seeing then that these things cannot be spoken against, ye ought to be quiet, and to do nothing rashly. For ye have brought hither these men, which are neither robbers of churches, nor yet blasphemers of your goddess. Wherefore if Demetrius, and the craftsmen which are with him, have a matter against any man, the law is open, and there are deputies: let them implead one another. But if ye enquire any thing concerning other matters, it shall be determined in a lawful assembly. For we are in danger to be called in question for this day's uproar, there being no cause whereby we may give an account of this concourse. And when he had thus spoken, he dismissed the assembly."—*Acts* xix. 35—41.

It is useful to religion to have logical advocates.

"For in him we live, and move, and have our being; as certain also of your own poets have said, For we are also his offspring. Forasmuch then as we are the offspring of God, we ought not to think that the Godhead is like unto gold, or silver, or stone, graven by art and man's device."—*Acts* xvii. 28, 29.

"Then they reviled him, and said, Thou art his disciple; but we are Moses' disciples. We know that God spake unto Moses: as for this fellow, we know not from whence he is. The man answered and said unto them, Why herein is a marvellous thing, that ye know not from whence he is, and yet he hath opened mine eyes. Now we know that God heareth not sinners: but if any man be a worshipper of God, and doeth his will, him he heareth. Since the world began was it not heard than any man opened the eyes of one that was born blind. If this man were not of God, he could do nothing."—*John* ix. 28—33.

"We know that thou art a teacher come from God: for no man can do these miracles that thou doest, except God be with him."—*John* iii. 2.

We shall conclude this section by a quotation from Archbishop Whately.

"Among the enemies of the Gospel now, are to be found men not only of learning and ingenuity, but of *cultivated argumentative powers*, and not unversed in the principles of Logic. If the advocates of our religion think proper to disregard this help, they will find, on careful inquiry, that *their opponents do not*. And let them not trust too carelessly to the strength of their cause: truth will, indeed, prevail, where all other points are nearly equal; but it may suffer a temporary discomfiture, if hasty assumptions,

unsound arguments, and vague and empty declamation, occupy the place of a train of close, accurate, and luminous reasoning.

"It is not, however, solely or chiefly for polemical purposes that the cultivation of the reasoning faculty is desirable; in persuading, and investigating, in learning, or teaching,—in all the multitude of cases in which it is our object to arrive at just conclusions, or to lead others to them, it is most important. A knowledge of logical rules will not indeed supply the want of other knowledge; nor was it ever proposed, by any one who really understood this science, to substitute it for any other; but it is no less true that no other can be substituted for this: that it is valuable in every branch of study; and that it enables us to use the knowledge we possess to the greatest advantage."—*Preface to Logic.*

SECTION IV.

THE DISPOSITIONS NECESSARY TO THE ART OF REASONING.

To reason well we must avoid prejudices or pre-judgments —judgments formed *before* we begin to reason. Dr. Watts has a chapter on the doctrine of prejudices or springs of false judgments. He divides them into four classes—prejudices arising from things, from words, from ourselves, and from others. We shall copy from that chapter, and from some other parts of his work, his observations on two dispositions, which those who wish to reason well ought to cultivate. We mean the love of truth, and a spirit of mental independence.

I. The love of truth:—

"Search for evidence of truth with diligence and honesty, and be heartily ready to receive evidence, whether for agreement or disagreement of ideas.

"Search with diligence; spare no labour in searching for the truth in due proportion to the importance of the proposition. Read the best authors who have writ on that subject; consult your wise and learned friends in conversation; and be not unwilling to borrow hints toward your improvement from the meanest person, nor to receive any glimpse of light from the most unlearned. Diligence and humility is the way to thrive in the riches of the understanding, as well as in gold or silver. Search carefully for the evidence of truth, and dig for wisdom as for hid treasure.

"Search with a steady honesty of soul, and a sincere impartiality

to find the truth. Watch against every temptation that might bribe your judgment or warp it aside from truth. Do not indulge yourself to wish any unexamined proposition were true or false. A wish often perverts the judgment, and tempts the mind strangely to believe upon slight evidence whatsoever we wish to be true or false. . . .

"Keep your mind always open to receive truth, and never set limits to your own improvement. Be ready always to hear what may be objected even against your favourite opinions, and those which have had longer possession of your assent. And if there should be any new and uncontrollable evidence brought against these old or beloved sentiments, do not wink your eyes fast against the light, but part with anything for the sake of truth: remember when you overcome an error you gain truth; the victory is on your side, and the advantage is all your own. . . .

"In your whole course of reasoning keep your mind sincerely intent on the pursuit of truth; and follow solid argument wheresoever it leads you. Let not a party spirit, nor any passion or prejudice whatsoever, stop or avert the current of your reasoning in quest of true knowledge.

"When you are inquiring therefore into any subject, maintain a due regard to the arguments and objections on both sides of a question. Consider, compare, and balance them well, before you determine for one side. It is a frequent, but a very faulty practice, to hunt after arguments only to make good one side of a question, and entirely to neglect and refuse those which favour the other side. If we have not given a due weight to arguments on both sides, we do but wilfully misguide our judgment, and abuse our reason, by forbidding its search after truth. When we espouse opinions by a secret bias on the mind, through the influences of fear, hope, honour, credit, interest, or any other prejudice, and then seek arguments only to support those opinions, we have neither done our duty to God nor to ourselves; and it is a matter of mere chance if we stumble upon truth in our way to ease and preferment. The power of reasoning was given us by our Maker for this very end, to pursue truth; and we abuse one of his richest gifts, if we basely yield it up to be led astray by any of the meaner powers of nature, or the perishing interests of this life. Reason itself, if honestly obeyed, will lead us to receive the divine revelation of the gospel, where it is duly proposed, and this will show us the path of life everlasting."

II. The spirit of mental independence :—

1. Independence of mind implies exemption from the influence of authority :—

"To believe in all things as our predecessors did, is the ready way to keep mankind in an everlasting state of infancy, and to lay an eternal bar against all the improvements of our reason and our happiness. Had the present age of philosophers satisfied themselves with the substantial forms and occult qualities of Aristotle, with the solid spheres, eccentrics, and epicycles of Ptolemy, and the ancient astronomers; then the great Lord Bacon, Copernicus, and Descartes, with the greater Sir Isaac Newton, Mr. Locke, and Mr. Boyle, had risen in our world in vain. We must have blundered on still in successive generations among absurdities and thick darkness, and a hundred useful inventions for the happiness of human life had never been known. . . .

"Besides, let us consider, that the great God, our common maker, has never given one man's understanding a legal and rightful sovereignty to determine truths for others, at least after they are past the state of childhood or minority. No single person, how learned and wise and great soever, or whatsoever natural, or civil, or ecclesiastical relation he may have to us, can claim this dominion over our faith. St. Paul the Apostle, in his private capacity, would not do it; nor hath an inspired man any such authority, until he makes his divine commission appear. Our Saviour himself tells the Jews, that 'if he had not done such wondrous works among them, they had not sinned in disbelieving his doctrines, and refusing him for the Messiah.' No bishop or presbyter, no synod or council, no church or assembly of men, since the days of inspiration, hath power derived to them from God, to make creeds or articles of faith for us, and impose them upon our understandings. We must all act according to the best of our own light, and the judgment of our own consciences, using the best advantages which Providence hath given us, with honest and impartial diligence to inquire and search out the truth; for 'every one of us must give an account of himself to God.'"

2. Independence of mind implies exemption from the influence of the passions:—

"The various passions or affections of the mind, are numerous and endless springs of prejudice. They disguise every object they converse with, and put their own colours upon it, and thus lead the judgment astray from truth. It is love that makes the mother think her own child the fairest, and will sometimes persuade us that a blemish is beauty. Hope and desire make an hour of delay seem as long as two or three hours; hope inclines us to think there is nothing too difficult to be attempted; despair tells us that a brave attempt is mere rashness, and that every

difficulty is insurmountable. Fear makes us imagine that a bush shaken with the wind has some savage beast in it, and multiplies the dangers that attend our path.... Sorrow and melancholy tempt us to think our circumstances much more dismal than they are, that we may have some excuse for mourning: and envy represents the condition of our neighbour better than it is, that there may be some pretence for her own vexation and uneasiness. Anger, and wrath, and revenge, and all those hateful passions, excite in us far worse ideas of men than they deserve, and persuade us to believe all that is ill of them. A detail of the evil influence of the affections of the mind upon our judgment, would make a large volume."

3. Independence of mind implies exemption from the influence of constitutional infirmities:—

"The credulous man is ready to receive every thing for truth, that has but a shadow of evidence; every new book that he reads, and every ingenious man with whom he converses, has power enough to draw him into the sentiments of the speaker or writer. He has so much complaisance in him, or weakness of soul, that he is ready to resign his own opinion to the first objection which he hears, and to receive any sentiments of another that are asserted with a positive air and much assurance.

"The man of contradiction is of a contrary humour, for he stands ready to oppose everything that is said: he gives a slight attention to the reasons of other men, from an inward scornful presumption that they have no strength in them. When he reads or hears a discourse different from his own sentiments, he does not give himself leave to consider whether that discourse may be true; but employs all his powers immediately to confute it. Your great disputers, and your men of controversy, are in continual danger of this sort of prejudice: they contend often for victory, and will maintain whatsoever they have asserted, while truth is lost in the noise and tumult of reciprocal contradictions; and it frequently happens, that a debate about opinions is turned into a mutual reproach of persons....

"Another sort of temper that is very injurious to a right judgment of things, is an inconstant, fickle, changeable spirit, and a very uneven temper of mind. When such persons are in one humour, they pass a judgment of things agreeable to it; when their humour changes, they reverse their first judgment, and embrace a new opinion. They have no steadiness of soul; they want firmness of mind sufficient to establish themselves in any truth, and are ready to change it for the next alluring falsehood that is agreeable to their change of humour. This fickleness

is sometimes so mingled with their very constitution by nature, or by distemper of body, that a cloudy day and lowering sky shall strongly incline them to form an opinion both of themselves, and of persons and things round about them, quite different from what they believe when the sun shines, and the heavens are serene.

"This sort of people ought to judge of things and persons in their most sedate, peaceful, and composed hours of life, and reserve these judgments for their conduct at more unhappy seasons."

4. Independence of mind implies exemption from the influence of manner :—

"There is another tribe of prejudices which are near akin to those of authority, and that is when we receive a doctrine because of the manner in which it is proposed to us by others. I have already mentioned the powerful influence that oratory and fine words have to insinuate a false opinion, and sometimes truth is refused, and suffers contempt in the lips of a wise man, for want of the charms of language: but there are several other manners of proposals, whereby mistaken sentiments are powerfully conveyed into the mind.

"Some persons are easily persuaded to believe what another dictates with a positive air, and a great degree of assurance: they feel the overbearing force of a confident dictator, especially if he be of a superior rank or character to themselves.

"Some are quickly convinced of the truth of any doctrine, when he that proposes it puts on all the airs of piety, and makes solemn appeals to heaven, and protestations of the truth of it: the pious mind of a weaker Christian, is ready to receive anything that is pronounced with such an awful solemnity.

"It is a prejudice near akin to this, when a humble soul is frighted into any particular sentiments of religion, because a man of great name or character pronounces heresy upon the contrary sentiments, casts the disbeliever out of the church, and forbids him the gates of heaven.

"Others are allured into particular opinions by gentler practices on the understanding; not only the soft tempers of mankind, but even hardy and rugged souls, are sometimes led away captives to error by the soft air of address, and the sweet and engaging methods of persuasion and kindness. . . . .

"There is another manner of proposing our own opinion, or rather opposing the opinions of others, which demands a mention here, and that is when persons make a jest serve instead of an argument; when they refute what they call error by a turn of wit, and answer every objection against their own sentiments, by

casting a sneer upon the objector. These scoffers practise with success upon weak and cowardly spirits: such as have not been well established in religion or morality, have been laughed out of the best principles by a confident buffoon; they have yielded up their opinions to a witty banter, and sold their faith and religion for a jest.

"There is no way to cure these evils in such a degenerate world as we live in, but by learning to distinguish well between the substance of any doctrine, and the manner of address, either in proposing, attacking, or defending it; and then by setting a just and severe guard of reason and conscience over all the exercises of our judgment, resolving to yield to nothing but the convincing evidence of truth, religiously obeying the light of reason in matters of pure reason, and the dictates of revelation in things that relate to our faith."

5. Independence of mind implies exemption from the influence of association:—

"A court lady, born and bred up amongst pomp and equipage, and the vain notions of birth and quality, constantly joins and mixes all these with the idea of herself, and she imagines these to be essential to her nature, and as it were necessary to her being: thence she is tempted to look upon menial servants, and the lowest rank of mankind, as another species of beings, quite distinct from herself. A plough-boy, that has never travelled beyond his own village, and has seen nothing but thatched houses, and his parish church, is naturally led to imagine that thatch belongs to the very nature of a house, and that that must be a church which is built of stone, and especially if it has a spire upon it. A child whose uncle has been excessive fond, and his schoolmaster very severe, easily believes that fondness always belongs to uncles, and that severity is essential to masters or instructors. He has seen also soldiers with red coats, or ministers with long black gowns, and therefore he persuades himself that these garbs are essential to the characters, and that he is not a minister who has not a long black gown, nor can he be a soldier who is not dressed in red. It would be well if all such mistakes ended with childhood. . . .

"When we have just reason to admire a man for his virtues, we are sometimes inclined not only to neglect his weaknesses, but even to put a good colour upon them, and to think them amiable. When we read a book that has many excellent truths in it, and divine sentiments, we are tempted to approve not only that whole book, but even all the writings of that author. When a poet, an orator, or a painter, has performed admirably in several illustrious pieces, we sometimes also admire his very errors, we

mistake his blunders for beauties, and are so ignorantly fond as to copy after them. . . .

"This sort of prejudice is relieved by learning to distinguish things well, and not to judge in the lump. There is scarce anything in the world of nature or art, in the world of morality or religion, that is perfectly uniform. There is a mixture of wisdom and folly, vice and virtue, good and evil, both in men and things. We should remember that some persons have great wit and little judgment; others are judicious, but not witty. Some are good humoured without compliment; others have all the formalities of complaisance, but no good humour. We ought to know that one man may be vicious and learned, while another has virtue without learning. That many a man thinks admirably well, who has a poor utterance; while others have a charming manner of speech, but their thoughts are trifling and impertinent. Some are good neighbours, and courteous, and charitable toward men, who have no piety towards God; others are truly religious, but of morose natural tempers. Some excellent sayings are found in very silly books, and some silly thoughts appear in books of value. We should neither praise or dispraise by wholesale, but separate the good from the evil, and judge of them apart; the accuracy of a good judgment consists much in making such distinctions."

SECTION V.

THE KNOWLEDGE NECESSARY TO THE ART OF REASONING.

I NEED hardly observe that to reason well, you must have common sense. This can be obtained only from Nature. While *learning* will increase your information, extend your range of inquiry, and unlock new sources of the most refined pleasure, it will not give you common sense. Nor does it appear that this common sense is ever much improved by learning. As is the child in this respect, so is the man. It is possible to have a strong memory and a weak understanding. Fools have become learned, and still have remained fools. Men of vast erudition have shown themselves weak in judgment, even in regard to those branches of knowledge in which they have obtained distinction—and miserably deficient in the ordinary affairs of life. It is only by common sense that we can reason and can judge of the soundness of our

reasonings. This power or faculty of the mind is not sparingly bestowed. It is given to almost every man, and to an extent that is found adequate for all the functions he is called upon to discharge. Common sense has been good sense in every age of the world.

Presuming then, gentle reader, that you are endowed with common sense, I will proceed to show you what further is required to enable you to reason well. Our instructions will be taken chiefly from the logic of Dr. Watts.

1. To reason well, you must understand the subjects that you reason about.

Go to the market-place, and listen to the conversation between the buyers and the sellers. How readily the sellers advance arguments to show that their goods are very cheap, and how promptly the buyers answer these arguments, and strongly argue on the other side. Now how is it that these uneducated people are enabled to argue so forcibly and so fluently? It is that they understand what they are talking about. And this must be the first step in all our reasonings.

We begin, therefore, by stating clearly what is the subject of discussion: and this is called giving a definition of it:

"In order to form a definition of anything, we must put forth these three acts of the mind.

"First, Compare the thing to be defined with other things that are most like itself, and see wherein its essence or nature agrees with them: and this is called the general nature or genus in a definition: so if you would define what wine is, first compare it with other things like itself, as cider, perry, &c. and you will find it agrees essentially with them in this, that it is a sort of juice.

"Secondly, Consider the most remarkable and primary attribute, property, or idea wherein this thing differs from those other things that are most like it; and that is its essential or specific difference: so wine differs from cider and perry, and all other juices, in that it is pressed from a grape. This may be called its special nature, which distinguishes it from other juices.

"Thirdly, Join the general and special nature together, or (which is all one) the genus and the difference, and these make up a definition. So the juice of a grape, or juice pressed from grapes, is the definition of wine.

"So if I would define what winter is, I consider first wherein it agrees with other things which are most like it, namely, summer, spring, autumn, and I find they are all seasons of the year; therefore a season of the year is the genus. Then I observe wherein it differs from these, and that is in the shortness of the days; for it is this which does primarily distinguish it from other seasons; therefore this may be called its special nature, or its difference. Then by joining these together, I make a definition. Winter is that season of the year wherein the days are shortest."

But every thing cannot be defined in this formal manner, and we may adopt any mode of expression we please, provided it will convey to others a correct description of what we mean. Thus we may say—

"Motion is a change of place. Swiftness is the passing over a long space in a short time. A natural day is the time of one alternate revolution of light and darkness, or it is the duration of twenty-four hours. An eclipse of the sun is a defect in the sun's transmission of light to us by the moon interposing. Snow is congealed vapour. Hail is congealed rain. An island is a piece of land arising above the surrounding water. A hill is an elevated part of the earth, and a grove is a piece of ground thick set with trees. A house is a building made to dwell in. A cottage is a mean house in the country. A supper is that meal which we make in the evening. A triangle is a figure composed of three sides. A gallon is a measure containing eight pints. A porter is a man who carries burthens for hire. A king is the chief ruler in a kingdom. Veracity is the conformity of our words to our thoughts. Covetousness is an excessive love of money, or other possessions. Killing is the taking away the life of an animal. Murder is the unlawful killing of a man. Rhetoric is the art of speaking in a manner fit to persuade. Natural philosophy is the knowledge of the properties of bodies, and the various effects of them, or it is the knowledge of the various appearances in nature, and their causes; and logic is the art of using our reason well, &c."

2. To reason well, you must clearly understand what is asserted about the subject.

"A proposition is a sentence wherein two or more ideas or terms are joined or disjoined by one affirmation or negation; as, 'Plato was a philosopher: every angle is formed by two lines meeting: no man living on earth can be completely happy.' When there are ever so many ideas or terms in the sentence, yet if they are

joined or disjoined merely by one single affirmation or negation, they are properly called but one proposition, though they may be resolved into several propositions which are implied therein, as will appear hereafter.

"There are three things which go to the nature and constitution of a proposition; namely, the subject, the predicate, and the copula.

"The subject of a proposition is that concerning which any thing is affirmed or denied: So 'Plato, angle, man living on earth,' are the subjects of the foregoing propositions.

"The predicate is that which is affirmed or denied of the subject: so 'philosopher' is the predicate of the first proposition; 'formed by two lines meeting,' is the predicate of the second; 'capable of being completely happy,' the proper predicate of the third.

"The subject and predicate of a proposition taken together, are called the matter of it; for these are the materials of which it is made.

"The copula is the form of a proposition; it represents the act of the mind affirming or denying, and it is expressed by the words, am, art, is, are, &c. or am not, art not, is not, are not, &c.

"The subject and predicate of a proposition, are not always to be known and distinguished by the placing of the words in the sentence, but by reflecting duly on the sense of the words, and on the mind or design of the speaker or writer: as if I say, In Africa there are many lions, I mean many lions are existent in Africa: many lions is the subject, and existent in Africa is the predicate. It is proper for a philosopher to understand geometry: here the word proper is the predicate, and all the rest is the subject, except is, the copula.

"But there are some propositions, wherein the terms of the subject and predicate seem to be the same; yet the ideas are not the same; nor can these be called pure identical or trifling propositions; such as Home is home; that is, home is a convenient or delightful place; Socrates is Socrates still; that is, the man Socrates is still a philosopher; The hero was not a hero; that is, the hero did not show his courage; What I have written, I have written; that is, what I wrote I still approve, and will not alter it: What is done, is done; that is, it cannot be undone. It may be easily observed in these propositions the term is equivocal, for in the predicate it has a different idea from what it has in the subject."

3. To reason well, you must know how to express yourself in clear and intelligible language.

"As we are led into the knowledge of things by words, so we are oftentimes led into error, or mistake, by the use or abuse of

words also. And in order to guard against such mistakes, as well as to promote our improvements in knowledge, it is necessary to acquaint ourselves a little with words and terms.

"Words (whether they are spoken or written) have no natural connexion with the ideas they are designed to signify, nor with the things which are represented in those ideas. There is no manner of affinity between the sounds *white* in English, or *blanc* in French, and that colour which we call by that name; nor have the letters, of which these words are composed, any natural aptness to signify that colour rather than red or green. Words and names therefore are mere arbitrary signs invented by men to communicate their thoughts or ideas to one another."

"Words and terms are either univocal or equivocal. Univocal words are such as signify but one idea, or at least but one sort of thing; equivocal words are such as signify two or more different ideas, or different sorts of objects. The words book, bible, fish, house, elephant, may be called univocal words; for I know not that they signify anything else but those ideas to which they are generally affixed; but head is an equivocal word, for it signifies the head of a nail, or of a pin, as well as of an animal: nail is an equivocal word, it is used for the nail of the hand, or foot, and for an iron nail to fasten anything. Post is equivocal, it is a piece of timber, or a swift messenger. A church is a religious assembly, or the large fair building where they meet; and sometimes the same word means a synod of bishops, or of presbyters; and in some places it is the pope and a general council.

"Here let it be noted, that when two or more words signify the same thing, as wave and billow, mead and meadow, they are usually called synonymous words; but it seems very strange, that words, which are directly contrary to each other, should sometimes represent almost the same ideas; yet thus it is in some few instances: a valuable or an invaluable blessing; a shameful, or a shameless villain; a thick skull, or a thin-skulled fellow—a mere paper skull; a man of a large conscience, little conscience, or no conscience; a famous rascal, or an infamous one. So uncertain a thing is human language, whose foundation and support is custom.

"As words signifying the same thing are called synonymous, so equivocal words, or those which signify several things, are called homonymous, or ambiguous; and when persons use such ambiguous words with a design to deceive, it is called equivocation."

"In your own studies, as well as in the communication of your thoughts to others merely for their information, avoid ambiguous and equivocal terms as much as possible. Do not use such words as have two or three definitions of the name belonging to them; that is, such words as have two or three senses, where there is any danger of mistake. Where your chief business is to inform the judgment, and to explain a matter, rather than to persuade

or affect, be not fond of expressing yourselves in figurative language, when there are any proper words that signify the same idea in their literal sense."

"When we communicate our notions to others, merely with a design to inform and improve their knowledge, let us, in the beginning of our discourse, take care to adjust the definition of names, wheresoever there is need of it; that is, to determine plainly what we mean by the chief words which are the subject of our discourse; and be sure always to keep the same ideas, whensoever we use the same words, unless we give due notice of the change. This will have a very large and happy influence, in securing not only others, but ourselves too, from confusion and mistake; for even writers and speakers themselves, for want of due watchfulness, are ready to affix different ideas to their own words, in different parts of their discourses, and hereby bring perplexity into their own reasonings, and confound their hearers."

"In communicating your notions, use every word as near as possible in the same sense in which mankind commonly use it; or which writers that have gone before you have usually affixed to it, upon condition that it is free from ambiguity. Though names are in their original merely arbitrary, yet we should always keep to the established meaning of them, unless great necessity requires the alteration; for when any word has been used to signify an idea, that old idea will recur in the mind when the word is heard or read, rather than any new idea which we may fasten to it. And this is one reason why the received definition of names should be changed as little as possible."

4. To reason well, you must accustom yourself to observe the reasonings of others, whether in books or conversation, and try to improve your own by observation and practice.

"Accustom yourselves to clear and distinct ideas, to evident propositions, to strong and convincing arguments. Converse much with those friends, and those books, and those parts of learning, where you meet with the greatest clearness of thought and force of reasoning. The mathematical sciences, and particularly arithmetic, geometry, and mechanics, abound with these advantages: and if there were nothing valuable in them for the uses of human life, yet the very speculative parts of this sort of learning are well worth our study; for by perpetual examples they teach us to conceive with clearness, to connect our ideas and propositions in a train of dependence, to reason with strength and demonstration, and to distinguish between truth and falsehood. Something of these sciences should be studied by every man who pretends to learning, and that, as Mr. Locke

expresses it, not so much to make us mathematicians, as to make us reasonable creatures.

"We should gain such a familiarity with evidence of perception and force of reasoning, and get such a habit of discerning clear truths, that the mind may be soon offended with obscurity and confusion: then we shall, as it were, naturally and with ease restrain our minds from rash judgment, before we attain just evidence of the proposition which is offered to us: and we shall with the same ease, and, as it were, naturally seize and embrace every truth that is proposed with just evidence.

"This habit of conceiving clearly, of judging justly, and of reasoning well, is not to be attained merely by the happiness of constitution, the brightness of genius, the best natural parts, or the best collection of logical precepts. It is custom and practice that must form and establish this habit. We must apply ourselves to it till we perform all this readily, and without reflecting on rules. A coherent thinker, and a strict reasoner, is not to be made at once by a set of rules, any more than a good painter or musician may be formed extempore, by an excellent lecture on music or painting. It is of infinite importance therefore in our younger years, to be taught both the value and the practice of conceiving clearly and reasoning right; for when we are grown up to the middle of life, or past it, it is no wonder that we should not learn good reasoning, any more than that an ignorant clown should not be able to learn fine language, dancing, or a courtly behaviour, when his rustic airs have grown up with him till the age of forty."

PART II.

THE PRINCIPLES OF REASONING.

We have now made some progress. We have gone through the first part of our book. We have considered the nature of reasoning—the subjects to which it is applied—its usefulness, and the dispositions and knowledge necessary to enable us to reason well.

We have ascertained that reasoning is that operation of the mind, whereby we infer one proposition from another proposition. It is obvious that there must be some connexion or relation between these two propositions. There must be a relation between the proposition containing the proof and the proposition which is to be proved. These relations are the foundation of all our reasonings. They are the principles on which we reason. There must be a relation between any doctrine, and the reasons we assign for believing that doctrine. There must be a relation between any act, and the reason we assign for performing that act. If we say

Fire will burn,
Water will drown;

here are two independent propositions. They have no connexion with each other. We can infer nothing from them. If we say, Fire will burn, and therefore water will drown, we see at once that the reasoning is absurd. Both the facts are true, but there is no foundation for the word "therefore." One fact is not the cause of the other. But if we say, Fire will burn, and therefore do not approach it too nearly; water will drown, and therefore do not bathe in deep water, unless you can swim; here the reasoning is obvious. Here is a relation or connexion between the proposition and the inference.

The power or faculty by which the mind perceives these relations, is called common-sense. We cannot explain how it is, but so it is. These relations are so numerous

that we cannot attempt to describe them all. But we will specify a few, and discuss them in the following order :—

1. The relation of Subject and Attribute.
2. The relation of a Whole and its Parts.
3. The relation of Genus and Species.
4. The relation of Cause and Effect—Physical causes.
5. The relation of Cause and Effect.—Moral causes.
6. The relation of Cause and Effect—Conditional causes.
7. The relation of Cause and Effect.—Final causes.

SECTION I.

THE RELATION OF A SUBJECT AND ITS ATTRIBUTES.

You understand Grammar. You know that a substantive is the name of any person, place, or thing ; and that an adjective is a word added to a substantive, to denote its quality. Well ; for substantive and adjective, say subject and attribute, and you will understand pretty clearly the topics of the present section. But the word attribute has a more extensive meaning than the word adjective. Every adjective denotes an attribute ; but sometimes an attribute is expressed by a verb, a particle, or by several words put together. Often too an adjective united to a substantive will become a subject. When you say simply, "A righteous man," the word man denotes the subject, and righteousness is the attribute. But when you say, "A righteous man regardeth the life of his beast," the words "righteous" and "man" united denote the subject, and "regardeth the life of his beast" is the attribute of the righteous man. Whatever you talk about is a subject, and what you say about it is an attribute. In many propositions, the subject of the attribute is often the subject of the proposition, and the attribute is the predicate. But this will depend on the grammatical construction of the sentence. For example, in the following sentence, "Blessed is the man that walketh not in the counsel of the ungodly, nor standeth in the way of sinners, nor sitteth in the seat of the scornful, but his delight is in the law of the Lord,

and in his law doth he meditate day and night," the word "blessed" denotes the attribute, and all the rest of the sentence is the subject.

Some attributes are called specific. They belong to the subject, and to no other subject. There are attributes chiefly that distinguish one class or species from others. Thus man is called a rational animal. Rationality is the specific attribute that distinguishes him from other animals. The specific attribute is called by logicians, a specific difference.

Other attributes are called common. They are essential to the subject, but they belong also to other subjects. Thus, it is an attribute of gold to be yellow. If a metal is not yellow, it is not gold. But other things are yellow besides gold. The colour yellow is an attribute common to many subjects. These common attributes are called properties.

Other attributes are accidental. Whatever attribute can be removed from the subject without destroying the subject, is considered to be accidental. A hat may be white, or black, or made of beaver, silk, or straw; they are accidental attributes, for all these might be changed, and yet the subject remain a hat. These attributes are called accidents.

This relation of subject and attribute is a very extensive one. Almost every thing we see, or hear, or know, is a subject, and has some kind of attributes. The usual way in which we define or describe any thing, is by an enumeration of its attributes. We shall here adduce a few propositions expressing this relation, and then we shall show how this relation is employed in reasoning.

Attributes of inanimate objects—*a tree:*

"I saw, and behold a tree in the midst of the earth, and the height thereof was great. The tree grew, and was strong, and the height thereof reached unto heaven, and the sight thereof to the end of all the earth: the leaves thereof were fair, and the fruit thereof much, and in it was meat for all: the beasts of the field had shadow under it, and the fowls of the heaven dwelt in the boughs thereof, and all flesh was fed of it."—*Dan.* iv. 10—12.

Attributes of animals—*the eagle:*

"Doth the eagle mount up at thy command, and make her

nest on high? She dwelleth and abideth on the rock, upon the crag of the rock, and the strong place. From thence she seeketh the prey, and her eyes behold afar off. Her young ones also suck up blood: and where the slain are, there is she."—*Job* xxxix. 27—30.

Attributes of a country—*the land of Canaan:*

"For the Lord thy God bringeth thee into a good land, a land of brooks of water, of fountains and depths that spring out of valleys and hills; a land of wheat, and barley, and vines, and fig-trees, and pomegranates; a land of oil olive, and honey; a land wherein thou shalt eat bread without scarceness, thou shalt not lack any thing in it; a land whose stones are iron, and out of whose hills thou mayest dig brass."—*Deut.* viii. 7—9.

Personal attributes—*St. Paul:*

"I am verily a man which am a Jew, born in Tarsus, a city in Cilicia, yet brought up in this city at the feet of Gamaliel, and taught according to the perfect manner of the law of the fathers, and was zealous toward God, as ye all are this day."—*Acts* xxii. 3.

Attributes of moral virtues—*divine wisdom:*

"But the wisdom that is from above is first pure, then peaceable, gentle, and easy to be intreated, full of mercy and good fruits, without partiality, and without hypocrisy."—*James* iii. 17.

You will now observe how the relation of subject and attribute is applied in reasoning.

1. From the presence of the subject, we may infer the presence of an essential attribute.

Arguments of this kind are often expressed in a conditional form. Thus we say—If this is a magnet, it will attract iron. To attract iron is the property of a magnet. This is an oyster, therefore it is good for food.

If a man has wealth, we may infer that he has the luxuries, enjoyments, and influence, attendant on wealth. If he has wisdom, we may infer that he will profit by instruction. "Give instruction to a wise man, and he will be yet wiser." If a man is a rogue, we may infer that it is not advisable to lend him any money, for "the wicked borroweth, and payeth not again."

2. From the absence of the subject, we infer the absence of its specific attribute.

Thus we may say—If this is not the juice of the grape, it is not wine. If this animal is not endowed with reason, it is not a human being. If this substance does not attract iron, it is not a magnet.

Although the absence of a subject shows the absence of its *specific* attribute, it does not prove the absence of any of its common attributes or properties. For these attributes belong also to other subjects. Thus, honesty is an attribute of religion; but we cannot say that if a man is not a religious man, he is not an honest man, for a man may be honest, without being religious. But we may reverse the case, and from the absence of the common attribute, infer the absence of the subject. We may say —If a man is not an honest man, he is not a religious man.

3. From the presence of a specific attribute, or of all the common attributes, we infer the presence of the subject.

Thus, if we should find a metal having all the common attributes of gold, we should know that it is gold. This principle is of great use in chemical experiments. Thus, we know that certain bodies have certain affinities for other bodies. To ascertain, therefore, whether this body be present in any compound substance, we add some body, for which the body, whose presence we wish to detect, has an affinity, or upon which it produces a known effect. There are certain chemical tests which are in constant use in such cases. Thus, the presence of the specific attribute shows the presence of the subject. So, if an auctioneer had to sell a house, he would enumerate all its attributes in order to show that it is *a most agreeable residence.* The projector of a new company enumerates all its attributes, in order to show that its shares would turn out a most *profitable investment.* A candidate for a seat in the House of Commons states all his attributes, in order to prove that he should be a most valuable member.

4. From the absence of an essential attribute, we infer the absence of the subject.

It is the attribute of mind to think. Matter cannot think, and hence we infer that matter is not mind. Again, it is an attribute of matter to be divisible, but mind is not divisible; hence, we infer that mind is not matter.

The bread and wine used in the sacrament do not after consecration possess the attributes of flesh and blood, and hence we infer that they are not flesh and blood; the absence of the attributes proves the absence of the subjects.

The following is an illustration from a sermon of Dr. Sumner, the present Archbishop of Canterbury, upon "Blessed are the merciful, for they shall obtain mercy."

"My brethren, if any of you are conscious that you have not forgiven a neighbour when he trespassed against you; if any of you are conscious that you have taken a malicious pleasure in making a brother's offences known, and injuring his credit; if any have pushed your rights to an extreme, and insisted on a severity of justice when you might rather have shown mercy and pity; if any have no feeling for their fellow-creatures' wants, and are contented to enjoy themselves, without bestowing a thought on those who have in this life *evil things;* you plainly perceive that the blessing bestowed on the merciful is not addressed to you: you must expect judgment without mercy, if you have shown no mercy."

In the same way reasons St. John. "Whoso hath this world's goods, and seeth his brother have need, and shutteth up his bowels of compassion from him, how dwelleth the love of God in him?" (1 John iii. 17.) Here the argument is, Benevolence is an attribute of piety; the absence of benevolence, therefore, shows the absence of piety.

5. If any two attributes may be ascribed to the same subject, then we may infer that these two attributes are not inconsistent with each other.

Sir Isaac Newton was a great philosopher, and also a man of strong religious principle; hence we infer that philosophy is not incompatible with religion. The late Sir Robert Peel had a taste for the fine arts, he was also a good man of business; hence we infer that a taste for the fine arts is not incompatible with habits of business. Sir Thomas Fowell Buxton was a very benevolent man, and yet a great sportsman; and hence we infer that benevolent feelings are not incompatible with a fondness for field-sports.

Writers on scholastic logic repeat the subject in this kind of argument so as to form two propositions, which they usually place under one another, and the conclusion

under them; and these three propositions taken together they call a syllogism; thus—

Sir Robert Peel had a taste for the fine arts.
Sir Robert Peel was a good man of business.
Therefore, a taste for the fine arts is not incompatible with habits of business.

The following examples of the same kind are copied from Mr. Munro's Manual of Logic:—

"All who assist in the progress of true science deserve the respect of mankind.
All who assist in the progress of true science have to contend with difficulties.
Some who have to contend with difficulties deserve the respect of mankind.

Some acts of friendship are acts which militate against justice.
All acts of friendship appear virtuous and splendid to the thoughtless.
Some things which appear virtuous and splendid to the thoughtless militate against justice.

All moral agents are responsible for their conduct.
Some moral agents are subject to severe temptations.
Some subject to severe temptations are responsible for their conduct.

No branch of science is altogether perfect.
All branches of science are worthy of diligent culture.
Some things worthy of diligent culture are not altogether perfect.

Some distinguished poets have not escaped poverty.
All distinguished poets do honour to their country.
Some who do honour to their country have not escaped poverty.

No bombastic writers are worthy of imitation.
Some bombastic writers are amusing.
Some things amusing are not worthy of imitation."

You will observe that this argument must not be pushed too far. It does not prove that either of the two attributes is the cause of the other; or that they always, or even often, accompany one another; but merely that they are not incompatible. Thus, if we say, The historian Gibbon was a man of great learning, and a man of infidel opinions; this would not prove that great learning is the cause of infidel opinions, or that they often

accompany each other; it shows only that they are not incompatible—that they may co-exist in the same subject. The following are examples of the same kind, expressed in a different form:—"The example of Virgil shows that a great poet may be seduced into some faults by the practice of imitation." "A man remarkable for his knowledge and policy, the wisdom of his maxims, the justness of his reasoning, and the variety, distinctness, and strength of his characters, may want exactness in his diction, and be careless in the art of writing, for we find all these qualities united in Lord Clarendon." "The law of Moses required the Israelites to treat all strangers with justice and kindness, and yet the law of Moses allowed the Israelites to receive interest for money lent to strangers; we may therefore infer that it is not unjust or unkind to receive interest for the loan of money."

6. If the same attribute cannot be ascribed to two specified subjects, then we may infer that those subjects are different from each other.

Thus, if the soul of man can reason, and the soul of a brute cannot reason, we infer that the soul of a man is different from the soul of a brute. If all fever produces thirst, and the patient does not suffer thirst, we infer that the patient has no fever. "A spirit hath not flesh and bones; you see that I have flesh and bones; you see then that I am not a spirit." The following examples are taken from the Port Royal Logic:—

"No liar is to be believed;
Every good man is to be believed;
Therefore no good man is a liar.

All those who are followers of Jesus Christ crucify the flesh;
All those who lead an effeminate and voluptuous life do not crucify the flesh;
Therefore none such are followers of Jesus Christ.

No virtue is contrary to the love of truth;
There is a love of peace which is opposed to a love of truth;
Therefore there is a love of peace which is not a virtue.

Every virtue is accompanied with discretion.
There is a zeal without discretion;
Therefore there is a zeal which is not a virtue."

You will observe that all these conclusions are negative.

We *deny* that one thing is another, because the attribute can be ascribed to one of these things and not to the other.

7. If a subject have certain attributes, we infer that it is adapted for the use to which those attributes are applicable.

Thus, from the attributes of Australia, Cape of Good Hope, or Canada, we infer that those countries are adapted for certain classes of emigrants. From the attributes of the Isle of Wight, Torquay, and Penzance, we infer that those places are suitable residences for people in danger of consumption. From the attributes of wool, we infer that a woollen garment worn next the skin is sometimes good for rheumatism. From the attributes of certain medicines, we endeavour to learn what are the respective complaints for which they are adapted. From the attributes of bones, lime, sea-weed, and fish we infer that they may be usefully applied as manure to certain kinds of land. So if a man have the attributes of honesty, industry, prudence, and perseverance, we infer that he will thrive in his pursuits. If a man apply for the office of Member of Parliament, excise officer, banker's clerk, or policeman, he must show that he has those attributes which will qualify him for the discharge of his official duties. The attributes of a joint-stock bank are, that it has more than six partners, that it has an amount of paid-up capital, and that on the death or retirement of any of its partners their portion of the capital is not withdrawn, but is transferred to other parties, and hence we infer that it is a safer system of banking for the public than if the partners were no more than six, and the death or retirement of any partner would cause the withdrawal of his portion of the capital. So from the attributes of the precious metals, it was inferred that they were adapted for the purposes of coin.

"That medium of exchange must be best which unites in itself the largest amount of the following qualities:—sameness of value both as to time and place, divisibility, durability, and facility of transportation. The metals—especially gold and silver—possess all these qualities in a great degree. We may have them in tons or in grains: wear is slow; fire will not destroy them; when divided, they can be fused again and re-blended; and, except

where large values are concerned, they are easily conveyed from place to place. Because metals possess these qualities, they were early and (in civilized countries) universally adopted as a medium of exchange."—*Rev. S. Martin's Lecture on Money.*

8. The presence of similar attributes in two or more subjects shows the probability of their corresponding in other attributes. This is called "reasoning by analogy," which we shall discuss more at length hereafter. We will here give only one example.

"It is natural to mankind to judge of things less known by some similitude, real or imaginary, between them and things more familiar or better known. And where the things compared have really a great similitude in their nature, when there is reason to think that they are subject to the same laws, there may be a considerable degree of probability in conclusions drawn from analogy. Thus we may observe a very great similitude between this earth which we inhabit and the other planets, Saturn, Jupiter, Mars, Venus, and Mercury. They all revolve round the sun, as the earth does, although at different distances and in different periods. They borrow all their light from the sun, as the earth does. Several of them are known to revolve round their axis, like the earth; and by that means must have a like succession of day and night. Some of them have moons that serve to give them light in the absence of the sun, as our moon does to us. They are all in their motions subject to the same law of gravitation as the earth is. From all this similitude, it is not unreasonable to think that those planets may, like our earth, be the habitation of various orders of living creatures."

9. The presence of any attribute shows the absence of a contrary attribute. This, of course, refers only to accidental attributes, for an essential attribute cannot be absent from its subject. Thus, if the weather be hot, it is not cold; if a man be humble, he is not proud; if avaricious, he is not liberal; if he has the gout, he is not in good health.

The presence of an accidental attribute in one instance, proves the possibility of such a subject becoming united to such an attribute in any similar case. Wisdom is the accidental attribute of a man, and therefore we are justified in inferring that a man may become wise. In the same way, wealth, learning, virtue, happiness, are attributes of man, and though not essential attributes, but only

accidental, yet they may all be acquired. Sometimes, as we have observed at page 31, an accidental attribute may be united to a subject, and form a new subject, which may have other attributes. Thus we may say—A wise man will receive instruction. Here the word "wise" is not viewed as an attribute, but as with "man" forming a subject, and a readiness to receive instruction is an essential attribute of a wise man.

In reasoning upon the relation subsisting between subject and attribute, it is always necessary to distinguish between those attributes which are essential, and those which are accidental. For, if we take accidental attributes, and argue upon them as though they were essential, our reasonings will be erroneous. Thus, the poet Ovid had a large nose. This was a mere accidental circumstance, and was by no means essential to him as a poet. If, therefore, we were to meet a man in the street with a large nose, we should not be justified in inferring that he was a poet. Some men of great minds have had feeble bodies, but it does not follow that a feeble body tends to invigorate the mind. Some men of great intellectual powers have been addicted to great vices, but it does not follow that great vices are a mark of intellect.

Erroneous reasonings under this head sometimes arise from our omission to take into account some one or more of the essential attributes. A tradesman may have all the attributes of a good man of business, except that he is fond of speculation. A young woman may have all the attributes of a good wife, except sweetness of temper. A house may have all the attributes of an agreeable residence, except that the chimney smokes. A man may have all the attributes of an excellent friend, except that he cannot keep a secret. Now, in these cases, if you had, from a review of the other attributes, come to the conclusion, "That tradesman is worthy of high credit;" "That young woman would make an excellent wife;" "That house is a most agreeable residence;" "That man is a most judicious friend," you would have formed erroneous conclusions. We read of several of the kings of Judah, who "walked in the ways of David their father," "*but* the high places were not taken away," "*but* the people still sacrificed in high

places," and hence, as an old divine observes, we often find that some unlucky " but" or other comes in and spoils all.

It may also happen, that when we have noticed all the attributes, our judgment may be kept in suspense from the conflicting character of these attributes. If we have to hire servants, those who are most skilled may be deficient in sobriety, or, if not deficient in sobriety, they may be deficient in industry, or in cleanliness. If we want a house, we cannot find one that has all the attributes we require. If we wish to emigrate, we can discover no colony exactly suited to our circumstances. In these cases we must balance the attributes one against the other. Here, a full knowledge of the subject, and plenty of common sense, are the best guides. The rules of logic, however, will teach us to decide coolly and systematically. The best way is that of Dr. Franklin. Write down on paper first, all the reasons for the affirmative, and then all the reasons for the negative. Having all the reasons thus before your eyes, weigh them deliberately, and see which preponderate.

> Let thine eyes look right on,
> And let thine eyelids look straight before thee,
> Ponder the path of thy feet,
> And let all thy ways be established.—*Prov.* iv. 25, 26.

SECTION II.

THE RELATION OF A WHOLE AND ITS PARTS.

You must observe that some ideas have no parts. Such are many attributes. The colours, green, red, blue, have no parts; nor have the tastes, sweet, sour, bitter, &c.; nor the sounds, loud, sharp, shrill, &c.; nor the various smells. The things that have parts are subjects having attributes. Such are all animals, all vegetables, all material objects, and all particles of matter, and all mechanical instruments, of every kind. An animal may be divided

into head, trunk, and limbs. A tree may be divided into root, trunk, branches, leaves, and fruit. A steam-engine may be divided into the several parts of which it is composed. A day may be divided into hours. A book may be divided into parts, or chapters, and those parts or chapters may be subdivided into sections or verses. An art or science may be divided into parts. Political economy may be divided into production, distribution, interchange, and consumption. The business of a manufactory may be divided into its various operations. A cotton manufacture may be divided into the departments of spinning, weaving, dyeing, and printing. A pound sterling may be divided into shillings, and each shilling into pence. A bushel may be divided into gallons, and each gallon into quarts and pints. A mile may be divided into furlongs, and each furlong into yards. A ton weight may be divided into hundreds, and these into pounds and ounces. A palace may be divided into apartments. A house may be divided into rooms. A farm may be divided into acres.

Upon this subject we shall quote Dr. Watts:—

"Ideas considered in their nature, are either simple or complex.

"A simple idea is one uniform idea which cannot be divided or distinguished by the mind into two or more ideas; such are a multitude of our sensations, as the idea of sweet, bitter, cold, heat, white, red, blue, hard, soft, motion, rest, and perhaps extension, and duration: such are also many of our spiritual ideas; such as thought, well, wish, knowledge, &c.

"A complex idea is made by joining two or more simple ideas together; as a square, a triangle, a cube, a pen, a table, reading, writing, truth, falsehood, a body, a man, a horse, an angel, a heavy body, a swift horse, &c.; every thing that can be divided by the mind into two or more ideas is called complex."

"Since our minds are narrow in their capacity, and cannot survey the several parts of any complex being with one single view, as God sees all things at once; therefore, we must, as it were, take it to pieces, and consider of the parts separately, that we may have a more complete conception of the whole. So if I would learn the nature of a watch; the workman takes it to pieces and shows me the spring, the wheels, the axles, the pinions, the balance, the dial-plate, the pointer, the case, &c. and describes each of these things to me apart, together with their figures and their uses. If I would know what an animal is, the anatomist

considers the head, the trunk, the limbs, the bowels, apart from each other, and gives me distinct lectures upon each of them. So a kingdom is divided into its several provinces; a book into its several chapters, and any science is divided according to the several subjects of which it treats."

"Each part singly taken must contain less than the whole, but all the parts taken collectively (or together) must contain neither more nor less than the whole. Therefore, if in discoursing of a tree you divide it into the trunk and leaves, it is an imperfect division, because the root and the branches are needful to make up the whole."

"In all divisions we should first consider the larger and more immediate parts of the subject, and not divide it at once into the more minute and remote parts. It would by no means be proper to divide a kingdom first into streets, and lanes, and fields; but it must be first divided into provinces or counties, then those counties may be divided into towns, villages, fields, &c.; and towns into streets and lanes.

"The several parts of a division ought to be opposite, that is, one part ought not to contain another. It would be a ridiculous division of an animal into head, limbs, body, and brains, for the brains are contained in the head."

"Let not subdivisions be too numerous without necessity: for it is better many times to distinguish more parts at once, if the subject will bear it, than to mince the discourse by excessive dividing and subdividing. It is preferable therefore in a treatise of geography, to say, that in a city we will consider its walls, its gates, its buildings, its streets, and lanes, than to divide it formally first into the encompassing and the encompassed parts; the encompassing parts are the walls and gates; the encompassed parts include the ways and the buildings; the ways are the streets and the lanes; buildings consist of the foundations, and the superstructure, &c.

"Divide every subject according to the special design you have in view. One and the same idea or subject may be divided in very different manners, according to the different purposes we have in discoursing of it. So if a printer were to consider the several parts of a book, he must divide it into sheets, the sheets into pages, the pages into lines, and the lines into letters. But a grammarian divides a book into periods, sentences, and words, or parts of speech, as noun, pronoun, verb, &c. A logician considers a book as divided into chapters, sections, arguments, propositions, ideas; and, with the help of ontology, he divides the propositions into subject, object, property, relation, action, passion, cause, effect, &c. But it would be very ridiculous for a logician to divide a book into sheets, pages, and lines; or for a printer to divide it into nouns and pronouns, or into propositions, ideas, properties, or causes.

"In all your divisions observe with greatest exactness the nature of things."

We shall consider the relation between a whole and its parts, with reference to arithmetical numbers, physical objects, and moral ideas.

1. Any arithmetical number may be divided into as many parts as it contains units; and, again, a unit may be divided into any number of fractional parts. It is obvious, that all the parts into which any number is divided must, when added together, be equal to the whole number. A sovereign is equal to twenty shillings; if, then, you receive in exchange for a sovereign only nineteen shillings, you will infer that you have not the whole. A pound weight is equal to sixteen ounces; if, then, in buying a pound of tea, or of sugar, you get only fifteen ounces, you will infer that you have not the whole.

Again, if two numbers that are equal to one another be multiplied respectively by any number, the products will be equal. If one Indian rupee be equal to one shilling and tenpence, you will infer that twenty rupees will be equal to twenty times one shilling and tenpence. So also—

If equal numbers be added to equal numbers, the totals will be equal.

If equal numbers be subtracted from equal numbers, the remainders will be equal.

If equal numbers be divided by equal numbers, the quotients will be equal.

These maxims are too obvious to require any illustration. They form the foundation of much of our reasoning with regard to figures and quantities.

Addition, subtraction, multiplication and division are the four operations with regard to numbers, and these operations are often called into exercise, not only with regard to our physical, but also with regard to our moral reasonings.

All the portions of the sacred cross exhibited in Catholic countries would, if put together, make a much larger cross than could have been carried by Simon the Cyrenian. Hence we infer, that some at least of these relics cannot be genuine, for all the parts of anything taken together cannot make more than the whole.

We use multiplication when we wish to present any matter of quantity or numbers in a strong light. Thus, in teaching economy, we may prove the evil of a daily extravagance, by showing how much it would cost in the course of a year :—

> "Compute the pence of but one day's expenses.
> So many pounds, and angels, groats, and pence,
> Are spent in one whole year's circumference."

To prove the danger of obstructed perspiration, Dr. Erasmus Wilson, in his "Practical Treatise on Healthy Skin," states that the pores of the skin are apertures of little tubes about a quarter of an inch long; that upon an average there are about 2,800 of these tubes in every square inch, and that "the number of square inches of surface in a man of ordinary height and bulk is 2,500. The number of pores, therefore, is 7,000,000, and the number of inches of perspiratory tube 1,750,000, that is, 145,833 feet, or 48,600 yards, or nearly 28 miles."

In the Report of the Board of Health upon the Supply of Water, it is stated that the Thames, Lea, and New River waters contain sixteen grains of lime in every gallon. "The importance of this mineral ingredient, however, is only to be correctly estimated when viewed in the aggregate;" for the daily supply of water is forty-six millions of gallons, and this quantity will contain twenty-six tons of lime.

If you are a clerk in a public office, and are behind your time a quarter of an hour every morning, in three hundred days that will amount to seventy-five hours; more than equal at six hours a-day to a holiday of twelve days in the course of the year. A large number of small parts will make a great whole.

The following anecdote *proves* the importance of punctuality by multiplication :—

"A member of the Committee being a quarter of an hour behind the time, made an apology, saying, the time passed away without his being aware of it. A Quaker present said—'Friend, I am not sure that we should admit thy apology. It were matter of deep regret that thou shouldest have wasted thine own quarter of an hour; but there are seven besides thyself, whose time thou

hast also consumed, amounting in the whole to two hours—and one-eighth of it only was thine own property.'"

Parties who keep omnibuses or other public conveyances waiting for them, should recollect that they are sporting with the time of all the other passengers.

While we multiply in order to prove the importance of an object, we use division when we wish to produce a contrary impression. Mr. Norman, the Bank Director, published a pamphlet a short time ago to show the lightness of our taxation. He divided the total amount of the taxes by the total number of the population; and he inferred that the taxation was light from the small average amount paid by each individual.

2. We shall next consider this principle of the whole and its parts with reference to physical objects. By physical objects we mean objects known to the senses,—such as relate to what is called natural philosophy. By chemistry we ascertain what are the parts of which these objects are composed. And hence we infer the purposes to which they may be applied. Thus, we learn that certain substances may be employed as medicines; and we discover the effects of particular kinds of food:—

"Of what is water composed? Of two gases—oxygen and hydrogen. In nine pounds of water, eight are oxygen, and one is hydrogen. Of what is atmospheric air composed? Principally of two gases, oxygen and nitrogen, mixed together in the proportion of one gallon of oxygen to four of nitrogen."—*Dr. Brewer's Guide to Science.*

"Fish contains large quantities of albuminous and gelatinous matter, which are frequently united with a considerable portion of oil. Though nutritive, it is light, and not stimulating, and, therefore, is often of great service as an article of diet to invalids. It does not favour the rapid development of the solid parts of the body, on which account the jockeys at our race-courses, during the time they are trying to reduce their weight, live principally on it."—*Dr. Trueman, on Food.*

"Fruits consist principally of gum, sugar, starch, and vegetable jelly, combined with different acids. They contain but little nutritious matter, though, on account of their flavour and coolness, they are very agreeable to the palate, and, therefore,

much prized as an article of diet. Their use is particularly beneficial to the health."—*Dr. Trueman, on Food.*

Here from a knowledge of the constituent parts of these substances we infer what would be the effect of the whole.

The relation between a part and a whole has sometimes furnished important evidence in cases of judicial proceedings. In a case of house-breaking, the thief had gained admission into the house by means of a penknife, which was broken in the attempt, and part left in the window-frame. The broken knife was found in the pocket of the prisoner, and perfectly corresponded with the fragment left. In the case of a man who had been shot by a ball, the wadding of the pistol, which stuck in the wound, was found to be part of a ballad which corresponded with another part found in the pocket of the prisoner.

The prophet Isaiah argues against the worship of images, on the ground that the wood of the image was only part of a tree, and could therefore have no more power or sanctity than the other parts which were used as fuel.

"The carpenter stretcheth out his rule; he marketh it out with a line; he fitteth it with planes, and he marketh it out with the compass, and maketh it after the figure of a man, according to the beauty of a man; that it may remain in the house. He heweth him down cedars, and taketh the cypress and the oak, which he strengtheneth for himself among the trees of the forest: he planteth an ash, and the rain doth nourish it. Then shall it be for a man to burn: for he will take thereof, and warm himself; yea, he kindleth it, and baketh bread; yea, he maketh a god, and worshippeth it; he maketh it a graven image, and falleth down thereto. He burneth part thereof in the fire; with part thereof he eateth flesh; he roasteth roast, and is satisfied: yea, he warmeth himself, and saith, Aha, I am warm, I have seen the fire. And the residue thereof he maketh a god, even his graven image: he falleth down unto it, and worshippeth it, and prayeth unto it, and saith, Deliver me; for thou art my god. And none considereth in his heart, neither is there knowledge nor understanding to say, I have burned part of it in the fire; yea, also I have baked bread upon the coals thereof; I have roasted flesh, and eaten it: and shall I make the residue thereof an abomination? shall I fall down to the stock of a tree?"—*Isa.* xliv. 13—17, 19.

The relation of a whole and its parts has sometimes a reference to questions in political economy.

"Let us now observe how the value of a commodity resolves itself into three component parts. Take for instance a load of hay; its price pays first the wages of the labourer who cut down the grass and made it into hay—then the profits of the farmer who sells it—and lastly, the rent of the field in which it grew. This, therefore, constitutes the whole cost of production of the load of hay, and may be called its natural value."—*Mrs. Marcet.*

3. We shall now consider the application of this principle to moral ideas. The word moral is not used here in its ethical sense, as opposed to immoral, but as opposed to physical. We cannot divide these ideas into parts so readily as we can divide arithmetical numbers, or as we may carve a fowl. Hence we often use the words *imply* or *include*, in order to denote the simple ideas of which they are composed. Thus at page 18, I have considered independence of mind as implying or including several things. Possibly it includes several other things besides those I have mentioned. But we are able to argue from these. For if it be a duty to cherish independence of mind, then it is a duty to cherish every one of the parts or principles of which it is composed. So *gratitude* includes a *consciousness* of favours received—a *disposition* to acknowledge them on proper occasions—and a *resolution* to return them when an opportunity occurs. *Honour* includes a regard to truth in words—humanity and generosity in actions—candour and forgiveness in thought, and resentment of insult or affront.

Under this relation we may class the points of belief, or practice adopted by any public body. The following are the points of the charter contended for by the Chartist: 1. Equal Electoral Districts. 2. Universal Suffrage. 3. Vote by Ballot. 4. Triennial Parliaments. 5. No Property Qualification for Members. 6. Payment of Representatives.

Lord John Russell, in his letter to the Bishop of Durham, thus enumerates the several parts or doctrines that form what is called Puseyism.

"Clergymen of our own Church, who have subscribed the Thirty-nine Articles, and acknowledged in explicit terms the Queen's supremacy, have been the most forward in leading their

flocks, 'step by step to the very verge of the precipice.' The honour paid to saints, the claim of infallibility for the Church, the superstitious use of the sign of the cross, the muttering of the Liturgy so as to disguise the language in which it is written, the recommendation of auricular confession, and the administration of penance and absolution—all these things are pointed out by clergymen of the Church of England as worthy of adoption, and are now openly reprehended by the Bishop of London in his Charge to the clergy of his diocese."

From the character of the individual doctrines, or practices, we infer the character of the whole system.

The settlement of a public question will sometimes turn upon this relation of a whole and its part. Last year Baron Rothschild took all the oath required from Members of Parliament, except the words "Upon the true faith of a Christian." His friends contended that these words were not part of the oath, and that the Baron, having now taken the oath, should be allowed to take his seat. The House of Commons decided that these words formed a part of the oath. The Baron, therefore, could not take his seat.

4. The following are erroneous reasonings in relation to this principle.

Saul, the king of Israel, was commanded to destroy the Amalekites, *and their* cattle. He destroyed the Amalekites but not their cattle. He afterwards contended that he had obeyed the command. He considered that a part was equal to the whole.

"When a public body, or society governed jointly by a number of managers, is prosperous, each manager will take to himself a high degree of credit for having caused that prosperity; so that, were the parts which each manager takes to himself added together, they would make more than the total amount of credit due to the whole body. On the other hand, when any public association becomes involved in difficulties, each manager is anxious to show that no part of the blame belongs to him; so that the total of the blame which each manager is willing to take to himself is not equal to the total blame that belongs to the whole body. It should be recollected in such cases that, whether of applause or censure, the total of all the parts cannot be either more or less than the whole."—*Anon.*

Mr. Caudle having lent a friend five pounds, Mrs. Caudle enumerates four or five ways in which this amount might

have been employed, and then concludes that the lending of this one sum of five pounds has subjected her to all those privations.

"You ought to be very rich, Mr. Caudle. I wonder who'd lend you five pounds? But so it is: a wife may work and may slave! Ha, dear! the many things that might have been done with five pounds. As if people picked up money in the street! But you always were a fool, Mr. Caudle! I've wanted a black satin gown these three years, and that five pounds would have pretty well bought it. All the girls want bonnets, and where they're to come from I can't tell. Half five pounds would have bought 'em—but now they must go without. Next Tuesday the fire-insurance is due. I should like to know how it's to be paid. Why, it can't be paid at all. That five pounds would have just done it—and now, insurance is out of the question. I did think we might go to Margate this summer. There's poor little Caroline, I'm sure she wants the sea. But no, dear creature! she must stop at home—all of us must stop at home—she'll go into a consumption, there's no doubt of that; yes—sweet little angel!—I've made up my mind to lose her, *now*. The child might have been saved; but people can't save their children and throw away their five pounds too."

Dean Swift, in his sarcastic "Advice to Servants," counsels them to act on the same fallacy.

"The cook, the butler, the groom, the market-man, and every other servant who is concerned in the expenses of the family, should act as if his master's whole estate ought to be applied to that servant's particular business. For instance, if the cook computes his master's estate to be a thousand pounds a-year, he reasonably concludes, that a thousand pounds a-year will afford meat enough, and therefore he need not be sparing; the butler makes the same judgment, so may the groom and the coachman; and thus every branch of expense will be filled to your master's honour."

SECTION III.

THE RELATION OF GENUS AND SPECIES.

THIS relation is founded upon the act of classification. Let us take a tree. There are many kinds of trees, as the oak, the elm, and there is a great number of oaks and elms. Here, then, a tree is the genus, oak, elm, are the

species, and a particular oak or elm that we may happen to see, is an individual. In all the branches of natural history, classification is very generally introduced. It is a rule, that the genus can always be asserted of each species. Thus we can say, an oak is a tree, and an elm is a tree. A vine is a tree. This shows that tree is a genus, and that oak, elm, and vine, are species under that particular genus. We may say—a horse is an animal, an ox is an animal, a dog is an animal. This proves that animal is a genus, and that dog, horse, and ox, are species under that genus.

Genus and species have a reference to moral ideas, as well as to physical ones. Thus we may say, industry is a virtue, frugality is a virtue, temperance is a virtue. This shows that virtue is a genus, and that frugality, industry, and temperance are its species.

You will observe that, although I call this, for brevity sake, the relation of genus and species, you must always remember that, while a genus may be divided into species, each species may again be subdivided into individuals. I use these words, genus and species, being words in common use, to express the general idea of classification.

1. The following are examples of classification:—

"All flesh is not the same flesh: but there is one kind of flesh of men, another flesh of beasts, another of fishes, and another of birds."—1 *Cor.* xv. 39.

"*Mountain* water, as it is pure and cold to the taste, is also beneficial to the health for drinking. If it cannot be obtained, *river* water may be resorted to. *Well* water I put in the last place, although everywhere it is agreeable for its coldness. It is almost always hard, unsuitable for dissolving soap and for cooking vegetables. The water of *lakes*, even although they may contain the purest waters, and appear pellucid, nevertheless become tepid from their isolation, and are flat and vapid."—*Report of the General Board of Health.*

"The capital of a manufacturer is of *two kinds*, fixed and circulating. The *fixed* capital remains always in his possession, as the mills, warehouses, &c. The *circulating* capital is always going out of his possession, as the materials of the manufacture, the wages of the workmen, &c. So the horses that draw the plough are part of the farmer's *fixed* capital, the sheep and oxen he sends to market for sale, are part of his *circulating* capital."—*Anon.*

"We find in Scripture history, a variety of intimations respecting *the productions* of Ancient Egypt. The history of Joseph informs us, that all nations went to Egypt to buy *corn*. After their departure from Egypt, the Israelites sang of their deliverance from the chariots of Pharaoh, and the horsemen thereof; and we find that Solomon obtained *horses* out of Egypt; from thence, also, his merchants obtained *linen yarn*. When Joseph was appointed prime minister, he was arrayed in vestures of fine *linen*. The garments of the Jewish priests were directed to be made of fine linen; and, as no linen could be obtained in the wilderness, this linen, or the flax from which it was made, must have been brought with them from Egypt. In the time of Solomon, the Jewish ladies decked their beds with tapestry and fine linen of Egypt; and, in later time, the Tyrians are said to have used the fine linen and broidered work of Egypt as sails for their ships."—*Lectures on Commerce.*

2. The rules for dividing a genus into its species, are similar to those for dividing a whole into its parts. A species is part of a genus.

"Each part singly taken must contain less than the whole, but all the parts taken collectively, or together, must contain neither more nor less than the whole; or, as logicians sometimes express it, the parts of the division ought to exhaust the whole thing which is divided."

"In all distributions we should first consider the larger and more immediate kinds or species, or ranks of being, and not divide a thing at once into the more minute and remote."

"The several parts of a distribution ought to be opposite; that is, one species or class of beings in the same rank of division ought not to contain or include another; so men ought not to be divided into the rich, the poor, the learned, and the tall; for poor men may be both learned and tall, and so may the rich."

"Let not subdivisions be too numerous, without necessity; therefore I think quantity is better distinguished at once into a line, a surface, and a solid; than to say, as Ramus does, that quantity is either a line or a thing lined; and a thing lined is either a surface or a solid.

"Distribute every subject according to the special design you have in view, so far as is necessary or useful to your present inquiry. Thus a politician distributes mankind according to their civil characters into the rulers and the ruled; and a physician divides them into the sick or the healthy; but a divine distributes them into Turks, heathens, Jews, or Christians."

"It is to this doctrine of distribution of a genus into its several species, we must also refer the distribution of a cause according to its several effects; as some medicines are heating, some are

cooling; or an effect when it is distinguished by its causes; as faith is either built upon divine testimony or human. It is to this head we refer particular artificial bodies, when they are distinguished according to the matter they are made of, as a statue is either of brass, of marble, or wood, &c.; and any other beings, when they are distinguished according to their end and design, as the furniture of body or mind is either for ornament or use. To this head also we refer subjects, when they are divided according to their modes or accidents; as men are either merry, or grave, or sad; and modes, when they are divided by their subjects, as distempers belong to the fluid, or to the solid parts of the animal."—*Dr. Watts.*

3. The mode of reasoning from genus and species is merely to show that a certain species is properly classed under a certain genus, and then to affirm or deny of the species what you may affirm or deny of the genus. Thus you may say, All fruit is useful to health: the apple is a kind of fruit, therefore the apple is useful to health. I may observe that this principle of reasoning from genus to species is the only kind of reasoning in which you gain anything by placing it in the form of a syllogism. And here, mind, the argument gains nothing in point of strength, but *sometimes* it gains a little in point of clearness; or, at least, it gives a clearer statement of the meaning of the reasoner.

The following are the examples given in the Logic of Dr. Watts:—

"Every wicked man is truly miserable;
All tyrants are wicked men;
Therefore all tyrants are truly miserable.

He that's always in fear is not happy;
Covetous men are always in fear;
Therefore covetous men are not happy.

Whatsoever furthers our salvation is good for us;
Some afflictions further our salvation;
Therefore some afflictions are good for us.

Nothing that must be repented of is truly desirable;
Some pleasures must be repented of;
Therefore there are some pleasures which are not truly desirable."

Here you will observe, that in the first syllogism, the genus is, "Every wicked man," and the species, "all tyrants."

In the second syllogism, "He that's always in fear," is the genus, and "covetous man" is the species under that genus.

In the third syllogism, "Whatever furthers our salvation" is the genus, and "some afflictions" is the species.

In the fourth syllogism, "Nothing that must be repented of" is the genus, and "some pleasures" is the species.

In natural logic we do not use these syllogisms. We should, in the above cases, express our reasons in the following manner:—

All tyrants are truly miserable, because they are wicked men.

Covetous men are not happy, because they are always in fear.

Some afflictions are good for us, because they further our salvation.

Some pleasures are not truly desirable, because they must be repented of.

4. The application of a general principle to a particular case, is another mode of reasoning, from the relation of genus and species.

"'Masters, *give unto your servants that which is just and equal*, knowing that ye also have a Master in heaven.'*

This general principle is thus applied with reference to the servants of public companies:—

"*Be just in your appointments*, and select those who are the most worthy and the best qualified for the duties they will have to discharge. *Be just in the amount of your remuneration*; recollect that many of the servants of public companies have greater trusts and heavier responsibilities than the servants of individuals; and in this case, it is just and equal that they be rewarded accordingly. *Be just in your promotions*, and let not merit be supplanted by patronage or favouritism. *Be just in the quantity of labour you exact*. Appoint a sufficient number of servants to do the work easily. Do not compel them to keep late hours; nor refuse reasonable holidays, for the purposes of health and recreation. *Be just in your pensions*, and let your aged and worn-out servants be treated with respect and liberality. *Be just in your reproofs*, 'Forbearing threatening.'† Let not your censures or your punishments be more than proportionate to the offence; and be as ready at all times to acknowledge the merits of your servants as to

* Col. iv. 1. † Eph. vi. 9.

notice their defects. All complaints, and all applications for increased remuneration or privileges, from the servants of public companies, should receive mature consideration; and all refusals should be given with kindness and courtesy."—*Gilbart's Practical Treatise on Banking.*

5. The application of general proverbs are cases of this description. Thus, "Honesty is the best policy." Therefore, when a public company has sustained losses, it is the best policy to announce them in its annual report to the shareholders, as that is the most honest procedure. This is one of the numerous cases to which this maxim may be applied. Dr. Franklin describes several specific characters under the genus that they "paid too dear for their whistle." And in daily life we meet with people to whom is applied the maxim, that "they have too many irons in the fire;" or that "they carry too many eggs in one basket;" or that "they are penny wise and pound foolish." In these cases the proverb is regarded as the genus, and the particular case to which it is applied is the species. This will appear the more evident if placed in the form of a syllogism.

It is unwise to have too many irons in the fire.

The man who carries on more trades than he can attend to, has too many irons in the fire.

Therefore, the man who carries on more trades than he can attend to, acts unwisely.

6. Rules and examples in any art or science sustain the relation to each other of genus and species. Take the following general rule in grammar from Lindley Murray:—"Two or more nouns, &c. in the singular number joined together by a copulative conjunction, expressed or understood, must have verbs, nouns, and pronouns agreeing with them in the plural number." Here is the general rule. Now, when we meet with two or more nouns, joined together in the manner stated, we apply the rule, and if we find that the verbs, nouns, and pronouns agreeing with them are put in the plural number, we infer that the sentence is grammatical; but, if otherwise, we say the sentence is ungrammatical. Now then, try by this rule the following sentences:—"Socrates and Plato were wise, they were the most eminent philosophers of Greece."

"And so was also James and John, the sons of Zebedee, who were partners with Simon." You perceive that the application of any general rule to a particular case, is a logical process, and forms an argument on the principle of genus and species. I may also observe, that, although in teaching an art systematically, we lay down our rules first, and then give the examples, yet, in the practical operations of teaching, especially in conversation, it is usually best to state the example first, and then state the rule as a deduction from the example. Indeed, most general rules were probably in the first instance deduced from examples. Men did not invent grammar first, and then learn to speak, but speech existed before grammar. The same remark may be applied very extensively. Poets existed before critics, and the practical arts before the sciences.

7. Arguments from enumeration may justly be classed under genus and species, as the enumeration is either of the individuals of a species, or of the species of a genus. Sometimes we enumerate the several arguments by which an opinion may be supported. Public speakers at the close of their address often do this. And judges on the bench enumerate, or sum up, as it is called, the arguments that have been used by the advocates. Sometimes, to prove the advantages or disadvantages of any engagement or pursuit, we enumerate them. In order to show that there is a pleasure in science, Lord Brougham thus enumerates the pleasures that it tends to produce :—

"It is easy to show that there is a positive gratification resulting from the study of the sciences. If it be a pleasure to gratify curiosity—to know what we are ignorant of—to have our feelings of wonder called forth; how pure a delight of this very kind does natural science hold out to its students! Recollect some of the extraordinary discoveries of mechanical philosophy. Observe the extraordinary truths which optical science discloses. Chemistry is not behind in its wonders; and yet these are trifling when compared to the prodigies which astronomy opens to our view: the enormous masses of the heavenly bodies; their immense distances; their countless numbers; and their motions, whose swiftness mocks the uttermost efforts of the imagination. Then, if we raise our view to the structure of the heavens, we are again gratified by tracing accurate, but most unexpected resemblances. Is it not in the highest degree interesting to find that the power

which keeps the earth in its shape, and in its path wheeling round the sun, extends over all the other worlds that compose the universe, and gives to each its proper place and motion; that the same power keeps the moon in her path round the earth; that the same power causes the tides upon our earth, and the peculiar form of the earth itself;—and that, after all, it is the same power which makes a stone fall to the ground? To learn these things, and to reflect upon them, produces certain as well as pure gratification." *Sullivan's Literary Class Book.*

The following is an enumeration of some of the duties of a public company:—

"The first of these duties is to obey the laws—a public company should abstain from smuggling and all other illicit proceedings—should make correct returns to Government, and pay its fair proportion of the property-tax, and of all other duties. 'Render unto Cæsar the things which are Cæsar's. Render to all their dues; tribute to whom tribute is due; custom, to whom custom; fear, to whom fear; honour, to whom honour.' * Another duty is to enforce the laws upon others. Individuals sometimes abstain from prosecuting frauds upon themselves, from a misapplied feeling of compassion, an unwillingness to incur odium, or the fear of expense; but none of these feelings are sufficient to justify a public company in abstaining from this duty. Such a course is injurious to the public, by holding out inducements to the commission of similar crimes. 'Because sentence against an evil work is not executed speedily, therefore the heart of the sons of men is fully set in them to do evil.' † It is also the duty of public companies to support the cause of order and of due submission to constituted authorities—the rights of property—the supremacy of the law—the impartial administration of public justice—and to honour the constitutional form of government of the country, by whatever party it may be administered. 'Put them in mind to be subject to principalities and powers, to obey magistrates, to be ready to every good work, to speak evil of no man, to be no brawlers, but gentle, showing all meekness unto all men.' ‡ Another duty is to conduct the affairs of the company on such a liberal, yet prudent scale of expense, as shall afford encouragement to the industry, trade, and fine arts of the country. Solomon says, 'Prepare thy work without, and make it fit for thyself in the field, and afterwards build thy house.' § Which means, if we understand it rightly, 'Get your money before you spend it, but having got it, live in a scale of expense corresponding to your means—afterwards build thy house.' Individuals may be justified in living much within their means, in order to

* Rom. xiii. 7. † Eccles. viii. 11. ‡ Tit. iii. 1, 2. § Prov. xxiv. 27.

provide for old age, or for the proper settlement of their children; but public companies cannot have such motives for conducting their establishments with an unsuitable economy. But, above all, it is the duty of a public company to maintain, in all its transactions, a high-toned morality. 'Righteousness exalteth a nation.'* A departure from moral rectitude is altogether inexcusable in a public company. As all their actions are presumed to be the result of previous deliberations, they cannot plead in excuse, as individuals do, the power of passion, the impulse of the moment, or the force of habit. In proportion to the weakness, or the absence of temptation, in such proportion would their conduct be the more criminal; † while their wealth and influence would render their example more extensively injurious to the public morality. If parties of high station in society depart from the strict rule of duty, those of inferior station will deviate still more widely. 'If a ruler hearken to lies, all his servants are wicked.'" ‡ *Gilbart's Practical Treatise on Banking.*

Sometimes, in regard to public questions, we enumerate the parties whose opinions are in favour of the proposed measure. There is an excellent example of this kind of argument in the speech delivered in the House of Commons, by Sir Thomas Fowell Buxton, on the Amelioration of the Criminal Code. It is copied into the Preface to his Life, written by his son. The following example is taken from a speech delivered at the Mansion House, in January 1850, by Mr. Samuel Jones Loyd, now Lord Overstone, in favour of the Industrial Exhibition :—

"It was no longer necessary for them to discuss its character or expediency; on these points the public were united. The scheme now went forth to the world stamped by the approbation and recommendation of our gracious Sovereign, as expressed in the act constituting the Royal Commission, and as further proved by the munificent donation with which she had headed the subscription. It was further stamped with the continued support of her illustrious Consort, whose original suggestion it was, and who had already been alluded to in terms not more complimentary than he deserved; for those who wished to know his true character should see him seated at the council board, and observe his capacity for conducting complicated public business with sagacity, perseverance, and energy. Beyond this the project went forth sanctioned

* Prov. xiv. 34. † Prov. vi. 30. ‡ Prov. xxix. 12.

by the authority of the ministers of this country, as evidenced by their advising the Crown to issue the Royal Commission, and by their presence on this occasion, through which so much weight was given to the proceedings of the day. It was still further sanctioned by the recorded resolutions of the people of England assembled in almost every great district of the empire, and lastly, by the two great meetings held in the Egyptian-hall."

8. Under this head of genus and species we may place reasoning from the definition. The genus and the specific difference, as we have already stated, are joined together to make a formal definition. Thus, in the example quoted from Dr. Watts, at page 24, *juice* is the genus, and *pressed from grapes* the specific difference, and those together, the juice of the grape, is the definition of wine. A definition formed in this way by the union of the genus and the difference, is called by scholastic logicians a *formal* definition. We cannot always obtain a definition of this kind, but when we can do so, we may reason from it in various ways.

We may infer that every thing to which this definition will apply are so many species under this generic term. Thus, port, sherry, claret, champagne, being all juices of grapes, are so many species of wine. All subjects will not, as we have said, admit of this formal definition. But you may generally commence your definition by stating the genus or general nature. Thus, if asked what is justice, you may say it is "a moral virtue." This is the genus. And then you may state wherein it differs from other moral virtues, as temperance, cleanliness, patience, &c. So, if you have seen the hippopotamus, and are asked what sort of a thing it is, you may say it is an animal that resembles a pig. This is the genus. And then you may state the points wherein it differs from a pig; and this will complete the description. Now, having got a definition, you may consider it as a species, and affirm of it what you may affirm of the genus. Thus, having defined justice to be a moral virtue, you may infer that it ought to be cultivated, inasmuch as all the moral virtues ought to be cultivated. Then you may consider the definition as a general principle applicable to individual cases. And

as the specific difference of justice consists "in giving to every one his due," you will infer that a master who defrauds his servant of his wages, a tradesman who cheats his creditors, a slanderer who speaks ill of worthy men, a magistrate who punishes the innocent, or who lets the guilty go free, does not act consistently with justice, as these parties do not give to every one his due.

But you must not be too precise about this matter of definition. If your opponent is disposed to cavil, he may easily find fault with any definition you can give. Even men of great talent and learning cannot agree among themselves upon this subject. The most eminent political economists give different definitions of such plain words as capital, profit, rent, wages,—words that we use in our ordinary conversation, without fancying that there is any difficulty or mystery about them. Sidney Smith, the most witty man of his time, was at a loss to find a definition for *wit*, and at the same time is very witty upon the definitions he quotes from other writers. Dryden's definition of wit, he says, will apply to Blair's Sermons, and Pope's to the Funeral Orations of Bossuet.

9. We reason erroneously from the relation of genus and species, when we place under the genus several species that do not belong to it, and then assert of each species what may be truly asserted of the genus.

Mrs. Opie, who had previously become a member of the Society of Friends, published a book entitled "Illustrations of Lying in all its Branches." Under the class of "practical lies," she places the practice of wearing false hair. This we think is an erroneous classification; for if we use the word liar in the sense in which it is usually employed, the wearer of false hair is not a species of that genus. A lie implies something immoral, but we do not think it is immoral to conceal defects that are inconvenient to the party himself, or that would be unpleasant to the beholders. Mrs. Opie's argument stands thus:—

A liar is one who wishes to deceive. He who wears false hair wishes to deceive. Therefore he who wears false hair is a liar.

We may refute this argument in the following ways:— We may say that the words "wishes to deceive," have

not the same meaning in the first or major proposition which they have in the second or minor proposition, and hence the two propositions are independent of each other, and they have no relation that can be a foundation for any reasoning respecting them. (See page 30.)

Or, we may admit that in both propositions the words "wishes to deceive" have the same meaning. But then they merely denote a common property—not a specific difference—and hence they do not prove that the two subjects are the same. Gold is yellow, and saffron is yellow, but it does not follow that saffron is gold. So in the present case, the common attribute does not prove that the two subjects are the same. (See page 32.)

Or, we may reduce the conclusion to an absurdity, thus: —All liars shall have their portion in the lake that burns with fire and brimstone. The man who wears false hair is a liar. Therefore the man who wears false hair shall have his portion in the lake that burns with fire and brimstone. This conclusion shows the absurdity of the classification.

In actual life we often meet with erroneous classifications of this kind. The words "want of courtesy" is a general term, often unjustly applied to individual actions. A person goes to transact some business at a public office, and is detained much longer than he expected. He becomes irritated, and declares he is treated with want of courtesy; whereas the delay may have been occasioned by the necessary forms of the office, or by his own ignorance of those forms. When a servant for some trifling oversight is charged with "neglect of duty," it is a fallacy of the same kind. The words "neglect of duty," is a generic phrase that is applied only to cases of wilful or serious omissions. To apply it in trifling cases is to use it illogically. Whenever we wish to represent any act in its worst colours, we use generic terms of so wide a meaning as to include several species of offences of a deeper dye than that we are called upon to censure; and, on the other hand, when we wish to extenuate, we employ generic terms that shall include only offences of a lighter hue. All these are fallacies arising from erroneous classification similar to that we have exemplified from Mrs. Opie.

At the same time we may observe that we have scriptural example for placing under the same genus those classes of offences that arise from the same motives. "He that hateth his brother is a murderer, and ye know that no murderer hath eternal life abiding in him." Here the argument is—

A murderer (even in heart) is no Christian. He that hateth his brother is a murderer (in heart). Therefore he that hateth his brother is no Christian.

10. We must also avoid the error of confounding two or more species because they belong to the same genus. Thus, when we find that two species resemble each other in some respects (which of course they always must do), we should infer they resemble each other in all respects. For example—

"He that says you are an animal, says true. He that says you are a goose says you are an animal. Therefore he that says you are a goose says true." Here the two premises are true, and yet the conclusion is absurd. It is true that you are an animal, and that a goose is an animal, and yet it is not true (of course I mean literally) that you are a goose: For you and the goose belong to different species, and although you resemble each other so far as to be properly classed under the same genus (animal), yet you cannot be asserted to be each other. So, dog, horse, camel, elephant, are species of animal, but a dog is not a horse, nor is a camel an elephant.

In the case of the genus "animal" we are not in much danger of falling into error. But we meet with similar errors elsewhere. I have read a debate in the House of Commons in which Unitarians were called Mahometans. Both these bodies agree in disbelieving the doctrine of the Trinity. But under this generic description, they form two widely different species, and one cannot logically be confounded with the other. You will often observe this practice in party writers. They will class the party against whom they write with some other party that has a disreputable name, and confound them both together under some generic description.

11. In reasoning on this principle we should always be on our guard against mere mental classifications. I mean

such as exist only in the mind, and not in the nature of the things themselves. The following quotation from Dr. Watts will explain what I mean.

"I may borrow a remarkable instance for my purpose almost out of every garden, which contains a variety of plants in it. Most or all plants agree in this; that they have a root, a stalk, leaves, buds, blossoms, and seeds: but the gardener ranges them under very different names, as though they were really different kinds of beings, merely because of the different use and service to which they are applied by men: as for instance, those plants whose roots are eaten, shall appropriate the name of roots to themselves; such are carrots, turnips, radishes, &c. If the leaves are of chief use to us, then we call them herbs, as sage, mint, thyme; if the leaves are eaten raw, they are termed salad, as lettuce, purslain; if boiled, they become pot-herbs, as spinage, coleworts; and some of those plants which are pot-herbs in one family are salad in another. If the buds are made our food, they are called heads or tops; so cabbage heads, heads of asparagus and artichokes. If the blossom be of most importance, we call it a flower; such are daisies, tulips, and carnations, which are the mere blossoms of those plants. If the husk or seeds are eaten, they are called the fruits of the ground; as peas, beans, strawberries, &c. If any part of the plant be of known and common use to us in medicine, we call it a physical herb; as carduus, scurvy-grass: but if we count no part useful, we call it a weed, and throw it out of the garden; and yet, perhaps, our next neighbour knows some valuable property and use of it; he plants it in his garden, and gives it the title of an herb, or a flower.

"Now, when things are set in this clear light, it appears how ridiculous it would be for two persons to contend, whether dandelion be an herb or a weed; whether it be a pot-herb or a salad; when, by the custom or fancy of different families, this one plant obtains all these names, according to the several uses of it, and the value that is put upon it."

A dispute somewhat similar to what is here intimated took place between Mr. Maculloch and Mr. Malthus upon the classification of labourers into productive and unproductive. Mr. Malthus, following Adam Smith, applied the word productive to such labourers only whose exertions *directly* produced material wealth. Mr. Maculloch extended the word so as to include those also whose labour *indirectly* produced wealth. Hence arose the important question, whether a dancer at the opera should be styled a productive or an unproductive labourer? Some good

paper and printing were expended in this wordy warfare. And after all, it was only a dispute about classification, for in other respects the antagonists did not differ in opinion. This example may teach us to use caution in the choice of the words we employ to denote our classifications. The words productive and unproductive seem to convey praise and censure. Had other words been employed, Adam Smith's distinction would not probably have been thought worthy of so much reproach.

12. In reasoning from this relation of genus and species, we should carefully notice the kind of universality which is attributable to the genus; for, if the general proposition be taken in too extensive a sense, the conclusion will be erroneous. On this subject we quote Dr. Watts:—

"Universal terms may either denote a mathematical, a physical, or a moral universality.

"A mathematical universality, is when all the particulars contained under any general idea have the same predicate belonging to them without any exception whatsoever; or when the predicate is so essential to the universal subject, that it destroys the very nature of the subject to be without it; as, All circles have a centre and circumference: All spirits in their own nature are immortal.

"A physical or natural universality, is when, according to the order and common course of nature, a predicate agrees to all the subjects of that kind, though there may be some accidental and preternatural exceptions; as, All men use words to express their thoughts, yet dumb persons are excepted, for they cannot speak. All beasts have four feet, yet there may be some monsters with five; or maimed, who have but three.

"A moral universality, is when the predicate agrees to the greatest part of the particulars which are contained under the universal subject; as, All negroes are stupid creatures: All men are governed by affection rather than by reason: All the old Romans loved their country: and the scripture uses this language when St. Paul tells us, 'The Cretes are always liars.'

"Now it is evident, that a special or singular conclusion cannot be inferred from a moral universality, nor always and infallibly from a physical one, though it may be always inferred from a universality which is mathematical, without any danger or possibility of a mistake.

"Let it be observed also, that usually we make little or no distinction in common language, between a subject that is physically or mathematically universal."

You will find that some political economists lay down general propositions, and reason from them as though they possessed a mathematical universality. But, from the nature of the science, this cannot be the case. It is a moral science, and its general propositions have only a moral universality. I mean that these rules have a good many exceptions. For example; one of its principles is, that the Government should not interfere with matters of trade—a very good rule, as a general rule; but when we are told that this rule is so inflexible that the Government must not interfere even in behalf of humanity and religion, then we contend that its advocates claim for this rule a universality to which it is not entitled. In this sense we deny the soundness of the rule. Nay, even those political economists who maintain most strongly this principle, maintain at the same time that the Government ought to pass laws for the regulation of the currency —a subject with which trade has a very close affinity.

It is rarely that a mathematical universality can be obtained with regard to those propositions that we usually act upon in ordinary life. We believe that all noblemen have honourable and patriotic feelings—that all judges are impartial in their decisions—that all London merchants are honest in their dealings—that no clergyman would tell an untruth—that our friends, whose constancy we have tried, will never desert us—that a man who has maintained a high reputation for thirty years will maintain it as long as he lives. But we have only moral evidence for all these propositions, and we can get no more. He who, in these and similar instances, would refuse to act until he should obtain mathematical evidence, would show a want of that wisdom and decision which are essential to the good administration of the affairs either of a family, a commercial establishment, or a political community.

13. We may observe, that all arguments formed on the relation of subject and attribute may also be brought under the relation of genus and species.

All subjects may be distributed into classes, according to their attributes. Thus, some horses are of a grey colour. Now, we may consider grey as an attribute of the horses, or we may consider grey horses as forming a class, and our

reasonings will be substantially the same, though, perhaps, changed in regard to form. Let us take an example from Dr. Watts :—

"No liar is fit to be believed.
Every good christian is fit to be believed.
Therefore, no good christian is a liar."

Here the words "fit to be believed" express an attribute, and, as this attribute will not apply to both the subjects, we infer that these subjects are different. See page 37.

But let us suppose that these words "fit to be believed" denote a class, then the argument will stand thus:—

"No man who is fit to be believed is a liar.
Every good christian is fit to be believed.
Therefore, no good christian is a liar."

Here "fit to be believed" denotes a class of persons, and "a good christian" is one of that class.

Let us take another instance of a different kind :—

"Whosoever loves God shall be saved.
All the lovers of God have their imperfections.
Therefore, some who have imperfections shall be saved."

Here we consider "shall be saved," and "have their imperfections," as denoting attributes, and as these attributes belong to the same subject, we infer they are not incompatible with each other. See page 35. But we may put the argument in a different form; we may consider the words, "lovers of God," as denoting a class or genus, and "some who have imperfections," as a species under that class. The reasoning would then stand thus :—

"All the lovers of God shall be saved.
Some who have imperfections are lovers of God.
Therefore, some who have imperfections shall be saved."

14. So, arguments founded on the principle of cause and effect may be brought under the principle of genus and species. One of the examples taken from Dr. Watts will exemplify this. "Some afflictions are good for us, because they further our salvation." Here we have evidently cause and effect, and this, in fact, is the best mode of

stating the argument. But, in the syllogism, Dr. Watts makes a class of "all those things that further our salvation," and then "some afflictions" become a subordinate class under that larger class, a species under a genus. Again, "A good education is highly valuable, for it softens the manners, and ameliorates the dispositions of the heart." Here is the relation of cause and effect. But a scholastic logician would not be satisfied with the argument in this form, but would turn it into genus and species. This is done by making the effect a genus, and the cause a species, thus:—"Everything that softens the manners, and ameliorates the disposition of the heart, is highly valuable. But a good education softens the manners, and ameliorates the dispositions of the heart. Therefore, a good education is highly valuable." You will observe, that this relation of genus and species does not strengthen your argument. It rather weakens it; or, at least, it widens the field of objection. An opponent might deny your first proposition. He might say, "I do not admit that everything that softens the manners and ameliorates the disposition of the heart is highly valuable: For there are some things that produce these effects, but at the same time produce other effects of a dangerous character. Such things, for instance, it might be said, are theatrical exhibitions." Here you see a new field of argumentation is at once thrown open. Had you stuck to your original principle of cause and effect, you would have been on safer ground. It is never advisable in argumentation to put yourself in a position to be called upon to prove the affirmative of a universal proposition. If a single exception can be adduced, your proposition is refuted, and your argument is overthrown.

It is generally best to argue from those principles of reasoning which arise from the relation of the things themselves, and not to attempt by mere verbal changes to bring your reasonings under a different principle. You should be on your guard against this practice, lest you fall into that system of scholastic logic which refers only to the use of words, and leaves unnoticed the nature of things.

SECTION IV.

THE RELATION OF CAUSE AND EFFECT—PHYSICAL CAUSES.

THE Relation of Cause and Effect is a principle of extensive use in the art of reasoning. But as causes are of various kinds, we must consider them separately in different sections; and in this section we shall confine our attention to those causes that refer to material substances, and are consequently styled physical. We shall, in the subsequent sections, consider those causes that are moral, conditional and final. We may observe, with regard to these four kinds of causes—physical, moral, conditional, and final—the first has reference to the physical sciences, as botany, physiology, geography, chemistry, &c.; the second has a reference to the sciences of politics and political economy; the third has a reference to jurisprudence and the affairs of ordinary life; the fourth has a reference to ethics and theology. We do not mean an exclusive reference, but a general reference.

1. The first class of causes we call physical causes. To this class of causes we refer all those effects which are produced by the uniform and necessary operations of nature. Thus, it is an established law of nature that the earth should move round the sun, and that the moon should move round the earth. All the phenomena which result from the revolutions of the heavenly bodies are the result of natural causes. It is a law of nature that all bodies on the earth should tend towards the centre; and that different kinds of matter, whether fluid or solid, should have certain properties, and that some of them should have an affinity for each other. Hence, all reasonings connected with astronomy, mechanics, chemistry, and the other branches of experimental philosophy, are founded on natural causes. The reasonings founded on this class of causes amount to demonstration. The cause necessarily and invariably produces the effect. The following are examples:—

"He sendeth the springs into the valleys, which run among the hills. They give drink to every beast of the field: the wild

asses quench their thirst. By them shall the fowls of the heaven have their habitation, which sing among the branches. He watereth the hills from his chambers: the earth is satisfied with the fruit of thy works. He causeth the grass to grow for the cattle, and herb for the service of man: that he may bring forth food out of the earth; and wine that maketh glad the heart of man, and oil to make his face to shine, and bread which strengtheneth man's heart."—*Psalm* civ. 10—15.

"It is a fluid, which agitates bodies when it is in motion. It has the properties of rarity, transparency, and elasticity; and when compressed has an amazing power, very similar to that of gunpowder. It conveys sound, and it is necessary to give us the sense of hearing: without air we should have no music, no smell; nor should we be able to converse with each other. The benefits arising from the winds are almost innumerable; they purify the air, moderate the heat, dry wet lands and damp houses, chase away the fogs and hazy weather, and bring us rain in due season; also frost and snow, and even mild weather. They are particularly serviceable for navigation and commerce. When the air is so full of heavy vapours that it can no longer sustain them, then these small moist particles run together, and fall down in fine drops, which we call rain. The rain descending in drops is a further manifestation of Divine wisdom; for if it fell in strong streams it would injure the earth, by washing away its fine light mould from the roots and seeds of plants; and we should suffer great inconvenience from it."—*Joyce's Catechism of Nature.*

"The annual overflowing of the Nile is caused by the periodical rains in Ethiopia. The river begins to rise in the latter end of June, and attains its utmost height about the middle of August, when Egypt presents the appearance of a vast sea, while the cities and towns appear like so many islands; after this the waters gradually subside, and about the end of November the river has returned to its ordinary limits. During this period the earth, or mud, which the waters held in solution, has fallen on the soil; and on the retiring of the waters, the whole land is covered with a rich manure; and, according to Herodotus, required so little cultivation, that, in some cases, it was only necessary that the seed should be thrown upon the surface, and trodden down by pigs."

"About eighty years after the conquest of Egypt by the Romans, they made an important discovery, which greatly facilitated the trade with India. This was the discovery of the periodical winds, which, from the advantages they confer upon trade, are now called the trade winds. Near the equator, there are regular winds, which follow the course of the sun. As the sun passes from east to west, the winds blow, on the north side

of the equator N.E., and on the south side S.E., occasionally to more or less E. These winds, which blow in the same direction all the year round, are called trade winds, from their utility to trade. Thus, if we wish to sail to the West Indies, we sail due south, till we get into the trade winds, and then sail due west. At a greater distance from the equator than the trade winds, are the winds called monsoons. The word monsoon signifies season. These winds blow for six months in the year from east to west, and in the remaining six months from west to east. There is such a monsoon as this between the Red Sea and India; between April and October it blows from the N.W., and during the other months from the S.E., keeping constantly parallel to the coast of Arabia. The ancients, who were in the practice of giving names to particular winds, called this wind Hippalus, that being the name of the discoverer. Instead of sailing round the coast as they had hitherto done, they now stretched across the gulf, and thus diminished the time consumed in the voyage. And in this way, the trade to India was carried on for upwards of fourteen hundred years."—*Lectures on Ancient Commerce.*

2. There are four ways of reasoning in regard to these physical causes. First, from the existence of the cause, we may infer the existence of the effect: if the sun rises, we know it must be day; if the earth comes between the sun and the moon, the moon will be eclipsed: if a body, of less specific gravity than water, be thrown into water, we know it will float. If fire be applied to gunpowder, an explosion will take place; if the colours blue and yellow be mixed together, they will produce a green; if a man has had his head cut off, we may infer that he is dead. The second mode of reasoning is, from the existence of the effect to infer the existence of the cause. All theories or systems are founded upon this mode of reasoning. We observe the appearances of nature, and we endeavour to ascertain the causes which have produced them: if we see an abundant harvest, we may infer that the land is good. The third mode of reasoning is, from the non-existence of the cause to infer the non-existence of the effect: in the deserts of Arabia there is no rain, consequently there can be no vegetation. The fourth mode of reasoning is, from the non-existence of the effect to infer the non-existence of the cause: the streets are not wet, therefore it cannot have rained recently.

Upon the farther application of this principle to reasoning, we quote Dr. Watts:—

"1. There is a system of beings round about us, of which we ourselves are a part, which we call the world, and in this world there is a course of nature, or a settled order of causes, effects, antecedents, concomitants, consequences, &c. from which the Author of Nature doth not vary but upon very important occasions.

"2. Where antecedents, concomitants, and consequents, causes and effects, signs and things signified, subjects and adjuncts, are necessarily connected with each other, we may infer the causes from the effects, and effects from causes, the antecedents from the consequents, as well as consequents from antecedents, &c., and thereby be pretty certain of many things both past, present, and to come. It is by this principle that astronomers can tell what day and hour the sun and moon were eclipsed five hundred years ago, and predict all future eclipses as long as the world shall stand. They can tell precisely at what minute the sun rises or sets this day at Pequin in China, or what altitudes the dog-star had at midnight or mid-noon in Rome on the day when Julius Cæsar was slain. Gardeners upon the same principle can foretell the months when every plant will be in bloom, and the ploughman knows the weeks of harvest: we are sure, if there be a chicken, there was an egg; if there be a rainbow, we are certain it rains not far off; if we behold a tree growing on the earth, we know it has naturally a root under ground.

"3. Where there is a necessary connexion between causes and effects, antecedents and consequents, signs and things signified, we know also that like causes will have like effects, and proportionable causes will have proportionable effects, contrary causes will have contrary effects; and observing men may form many judgments by the rules of similitude and proportion, where the causes, effects, &c. are not entirely the same.

"4. Where there is but a probable and uncertain connexion between antecedents, concomitants, and consequents, we can give but a conjecture, or a probable determination. If the clouds gather, or the weather-glass sinks, we suppose it will rain: if a man spit blood frequently with coughing, we suppose his lungs are hurt: if very dangerous symptoms appear, we expect his death."

3. We are in danger of false reasoning when the same effect results from two causes, and we ascribe it exclusively to one. Thus, if it be a dark day, and we infer that the sun is eclipsed, we may be in error; because, although an

eclipse of the sun may produce this effect, yet it may be produced by other means, such as the intervention of a cloud. In such obvious cases there is little occasion for mistake. We are most exposed to error by ascribing effects to wrong causes: thus, for many ages the appearances of the celestial bodies were ascribed to their motion round the earth; whereas it has since been demonstrated that these effects could not be produced by such a cause. The French philosopher, Des Cartes, imagined certain whirlpools in the atmosphere, by which he attempted to account for the appearances of nature. Thunder and lightning, earthquakes and volcanoes, are effects which have been ascribed to a variety of causes, according to the hypotheses of different philosophers: The flux and reflux of the tide, the origin of rivers, the phenomena of electricity, and many other appearances connected with natural philosophy, have furnished curious specimens of false reasoning in assigning causes.

"I would make this matter a little plainer still by instances borrowed from the peripatetic philosophy, which was once taught in all the schools. The professor fancies he has assigned the true reason why all heavy bodies tend downward, why amber will draw feathers or straws, and the loadstone draw iron, when he tells you that this is done by certain gravitating and attractive qualities, which proceed from the substantial forms of those various bodies. He imagines that he has explained why the loadstone's north pole shall repel the north end of a magnetic needle, and attract the south, when he affirms that this is done by its sympathy with one end of it, and its antipathy against the other end. Whereas in truth, all these names of sympathy, antipathy, substantial forms, and qualities, when they are put for the causes of these effects in bodies, are but hard words, which only express a learned and pompous ignorance of the true cause of natural appearances."—*Watts.*

4. To prove the connexion between a physical cause and its effects, is not the province of reasoning, but of observation and experiment. During the middle ages, the scholastic logicians treated the physical sciences in the way intimated by Dr. Watts. Lord Bacon first advocated the necessity of a different course. Soon afterwards, the "Royal Society, for the improvement of Natural Science," was established, and its transactions were very influential to

leading to a more accurate mode of ascertaining the causes of natural phenomena.

"But it must not be forgotten how much is due to Lord Bacon, who died only thirty-six years before the incorporation of the Royal Society. With a comprehensive and commanding mind, patient in inquiry, subtile in discrimination, neither affecting novelty, nor idolizing antiquity, Bacon formed, and in a great measure executed, his great work, on the *Instauration of the Sciences*, which being clearly connected in its main features with the Royal Society, connects itself with our inquiry. The design was divided into six capital divisions. The first proposes a general survey of human knowledge, and is executed in the admirable treatise, *The Advancement of Learning*. In this Lord Bacon critically examines the state of learning in its various branches at that period, observes and points out defects and errors, and then suggests proper means for supplying omissions and rectifying mistakes.

"The second, and the most considerable part, is the *Novum Organum*, in which the author, rejecting syllogism as a mere instrument of disputation, and putting no trust in the hypothetical systems of ancient philosophy, recommends the more slow, but more satisfactory method of induction, which subjects natural objects to the test of observation and experience, and subdues nature by experiment and inquiry. It will be seen how rigidly the early Fellows of the Royal Society followed Bacon's advice."

"Whilst the memory of this great man was cherished, and the spirit of his philosophy abroad, the establishment of the Royal Society was accomplished. A great number of eminent men existed at that period in England, nearly all of whom were warmly interested in the progress of science; and it thus only required the cessation of domestic troubles, to cause their attention to be turned to experimental philosophy."

In the year 1662 the Royal Society obtained a charter of incorporation from Charles II. The following is an extract from the preamble:—

"And, whereas we are well informed, that a competent number of persons, of eminent learning, ingenuity, and honour, concording in their inclinations and studies to-

wards this employment, have for some time accustomed themselves to meet weekly, and orderly, to confer about *the hidden causes of things*, with a design to establish certain, and correct uncertain theories in philosophy, and by their labours in the disquisition of nature, to prove themselves real benefactors to mankind; and that they have already made a considerable progress by divers useful and remarkable discoveries, inventions, and experiments in the improvement of mathematics, mechanics, astronomy, navigation, physic, and chemistry, we have determined to grant our Royal favour, patronage, and all due encouragement to this illustrious assembly, and so beneficial and laudable an enterprise."—*History of the Royal Society, by C. R. Weld.*

It has been asserted that the Incorporation of the Royal Society was the only wise act of Charles II.

On one occasion the merry monarch is said to have asked a company of philosophers how they could account for the fact that if a live fish were put into a vessel of water, the vessel would weigh no heavier than before. Some of them learnedly discussed the question, broaching several theories respecting the properties of water and air, the phenomena of life, &c. At last the king said to one who had not previously spoken on the subject, Well, doctor, how do you account for this? He replied, Before I assign any cause for it, I should like to ascertain the fact: suppose we make the experiment. A vessel of water was accordingly brought in and weighed; a live fish was then put into the water: and behold, the weight of the vessel was increased by precisely the weight of the fish.

To form theories without investigating the facts was the method of the Aristotelian Philosophy. To ascertain the facts first by experiment was the method introduced and recommended by Lord Bacon.

"Certainly," says Sydney Smith, "the two human beings who have had the greatest influence upon the understandings of mankind have been Aristotle and Lord Bacon. To Lord Bacon we are indebted for an almost daily extension of our knowledge of the laws of nature in the outward world; and the same modest and cautious spirit of inquiry, extended to moral philosophy, will pro-

bably at last give us clear, intelligible ideas of our spiritual nature. Every succeeding year is an additional confirmation to us that we are travelling in the true path of knowledge; and as it brings in fresh tributes of science for the increase of human happiness, it extorts from us fresh tributes of praise to the guide and father of true philosophy. To the understanding of Aristotle, equally vast, perhaps, and equally original, we are indebted for fifteen hundred years of quibbling and ignorance, in which the earth fell under the tyranny of words, and philosophers quarrelled with one another, like drunken men in dark rooms, who hate peace without knowing why they fight, or seeing how to take aim. Professors were multiplied without the world becoming wiser; and volumes of Aristotelian philosophy were written, which, if piled one upon another, would have equalled the tower of Babel in height, and far exceeded it in confusion. Such are the obligations we owe to the mighty Stagirite; for that he *was* of very mighty understanding, the broad circumference and the deep root of his philosophy most lamentably evince. His treatises on government, on rhetoric, on poetry, are still highly valued. I have been speaking of him as a natural philosopher, as a metaphysician, and as a logician. I would refer those who are great sticklers for Aristotle's various treatises on morals to Grotius' critique on them in his treatise on peace and war, and to Barbeyrac's preface to Puffendorf. Of his experiments Lord Bacon says, that, of all the ancient philosophers, Aristotle was the greatest enemy to experimental philosophy; for he first of all laid down a theory in his own mind, and then distorted his experiments to support it. In his treatise on government there are some very enormous and atrocious doctrines."

5. Geology is a physical science in which we must gather our information from observation and research, not from reasoning. The professors of this science have mistaken the kind of evidence by which its principles are to be supported, when they tell us that the world was originally formed of water, or of fire, or of some elementary matters that required millions of ages to be reduced to their present form. Here reasoning is substituted for observation. Theory takes the place of fact, or if facts

are referred to, they are explained in such a way as to make them conform to the theory. It was in this way that astronomy was treated by the scholastic logicians of the middle ages; and consequently Galileo was sent to prison for asserting that the earth moved round the sun.

Under the head of *physical* causes and effects we include those which refer to living animals. Our knowledge here is derived from observation. But still there is much room for reasoning. We may inflate a balloon with certainty whenever we please; but we cannot with equal certainty fatten an ox. There is an art in this. Some kinds of cattle will fatten sooner than others; and some kinds of food will produce fat sooner than others. To ascertain the cheapest and best modes of fattening, we must have recourse to experiments. The results of such experiments are exhibited at the agricultural shows. We sometimes read in the public papers complaints against the excessive fattening of cattle, inasmuch as these cattle become unfit for food. We think these complaints have no solid foundation. The cattle are not fattened for food; they are fattened to teach the art of fattening: And whether these few cattle thus fattened to excess should be eaten or not, is a matter of little importance, as compared with the practical knowledge which by this means the agriculturist may be able to obtain.

6. The sciences of medicine, politics, and political economy, are partly physical, partly moral. You maintain your health by wholesome diet, pure air, early rising, occupation, and exercise. These are physical causes. It is also maintained by the discipline of the mind, and the government of the passions. These are moral causes.

The human body is an animal. But from its union to mind it is less than other animals under the control of physical agencies. We cannot fatten a man with as much certainty as we can fatten an ox. A tradesman on the verge of bankruptcy, a lady languishing with a broken heart, would from anxiety of mind baffle all attempts to make them fat. But when the mind is unoccupied, the body will yield to physical treatment. Pugilists and pedestrians undergo a course of training previous to their perform-

ances. By a regular course of diet and exercise, strength and agility are greatly increased.

"The sensible effects produced by training, independently of the increased facility of muscular exertion, are the loss of fat, the increased size and hardness of the muscles, the skin becoming clearer, smooth, well-coloured and elastic. He can draw a deeper inspiration, and hold his breath longer than before; he feels himself light and *corkey;* his mind is clearer, his attention ready, his perceptions acute."—*Mayo's Philosophy of Living*, p. 136.

The science of medicine is founded on experiments. What effect any substance taken into the stomach would produce generally upon the body could only be known at first by making the trial. But in the use of new medicines, and in the application of medicines generally to different constitutions, there is much need of sound reasoning. But after all, the result is the only test of medical skill. The surest proof of good treatment is the recovery of the patient.

Homœopathy must likewise be tested by experiments. The homœopathists contend that every disease has a specific remedy. This remedy will cure the disease with as much certainty as bark cures ague or as acids cure scurvy. They say they have discovered all these specific remedies. This is the fundamental principle of the system. The doctrine of small doses is subordinate. They say that by trituration the power of medicines is so much increased, that a small dose will have a greater effect than a larger dose which has not undergone this operation. These are the two main principles of homœopathy. Their truth must be proved by experiment, not by reasoning. But reasoning may be useful in deciding on the best ways of making the experiments.

The relation between physical causes and effects is first proved by observation and experiment. Having ascertained this, we employ reasoning for the purpose of applying this knowledge to a practical purpose. For instance, we ascertain, not by reasoning, but by experiment or observation, that fire will turn water into steam; and then by reasoning we apply that steam to work an engine.

SECTION V.

THE RELATION OF CAUSE AND EFFECT—MORAL CAUSES.

WHILE physical causes refer to the operations of matter, moral causes refer to the operations of mind. The former relate to the sciences of chemistry, geology, astronomy and other physical sciences. The latter relate to moral philosophy, political economy, and those other sciences that relate to the acts and habits of intelligent beings. We trace the operations of these causes, with reference to individuals, families, and nations.

1. The following are examples of moral causes and effects:—

"Seest thou a man diligent in his business? he shall stand before kings; he shall not stand before mean men."—*Prov.* xxii. 29.

"Who hath woe? Who hath sorrow?
Who hath contentions? Who hath babbling?
Who hath wounds without cause? Who hath redness of eyes?
They that tarry long at the wine;
They that go to seek mixed wine."—*Prov.* xxiii. 29, 30.

"It is a doctrine of Mr. Hume, in his 'Essay on Money,' that an influx of the precious metals gives great encouragement to industry, during the interval which elapses before the prices of commodities are adjusted to the increased quantity of specie. 'We find,' says he, 'that in every kingdom into which money begins to flow in greater abundance than formerly, every thing takes a new face: labour and industry gain life; the merchant becomes more enterprising, the manufacturer more diligent and skilful, and even the farmer follows his plough with greater alacrity and attention. In my opinion,' he continues, 'it is only in this interval, or intermediate situation, between the acquisition of money and rise of prices, that the increased quantity of gold and silver is favourable to industry.'"—*Questions on Political Economy.*

"But if a man is a fool to expect to attain wealth by dishonest means, he is a still greater fool if he expects that wealth so acquired will afford him any enjoyment.—Enjoyment did I say? Is it possible, that in such a case, any man can expect enjoyment? What! enjoyment for you—you who have obtained wealth by

falsehood—by deception—by extortion—by oppression—you expect enjoyment? Listen—listen to the hearty denunciations of all honest men; to the awful imprecations of those you have injured; to the reproaches of your family, whose name you have dishonoured; to the accusations of that conscience whose voice you have stifled, and to the wrathful thunder of that heaven whose laws you have outraged! Listen to these—these are the *enjoyments* that will attend your ill-gotten wealth:—'He that getteth riches and not by right, shall leave them in the midst of his days: and at his end shall be a fool.'"—*Lectures on Ancient Commerce.*

"We hold that a Church Establishment is the most effective of all machines for the moral instruction of the people, and that, if once taken down, there is no other instrumentality by which it can be adequately replaced. We are aware, that it may be feebly and even corruptly administered; but the way to rectify this, is not to demolish the apparatus, but to direct its movements. It is the means of turning so much unproductive into productive consumption. Without a church the whole of our ecclesiastical wealth would have been in the hands of those who give no return for it. With a church we have the return of all its usefulness—its theological learning—the protection which it affords against a desolating infidelity—the service which it renders to the morality of the commonwealth—and, above all, to the eternal well-being of the individual members who compose it."—*Dr. Chalmers on Political Economy.*

"Reasons for Learning to Sing.—William Bryde, one of the greatest musicians of the Elizabethan age, in the preface to his collection of 'Psalms, Sonnets and Songs of Sadness and Pietie,' published in 1598, gives the following reasons for learning to sing, the amusing quaintness of which is mingled with good sense:—'Reasons brieflie set down by th' auctor to persuade everie one to learn to sing.—1. It is knowledge easilie taught and quicklie learned, when there is a good master and apt scholar. —2. The exercise of singing is delightful to nature, and good to preserve the health of man.—3. It doth strengthen all parts of the heart, and doth open the pipes.—4. It is a singular good remedie for a stuttering and stammering in the speech.—5. It is the best means to preserve a perfect pronunciation and to make a good orator.—6. It is the only way to know where nature hath bestowed the benefit of a good voyce; which gift is so rare, that there is not one amongst a thousand that hath it; and, in manie, that excellent gift is lost, because they want an art to express nature.—7. There is not any musicke of instruments whatsoever comparable to that which is made of the voyce of men, where the

voyces are good, and the same well sorted and ordered.—8. The better the voyce is, the meter it is to honour and serve God therewith; and the voyce of man is chiefly to be employed to that end.

"'Since singing is so good a thing,
I wish all men would learn to sing.'"—*Musical World.*

2. With regard to moral causes, we may adopt the following modes of reasoning.

First. From the existence of the cause we may infer the existence of the effect. Thus, if a man be industrious, we may infer that he will get rich. If a man be given to intoxication, we may infer that he will reduce himself to beggary. If a man exercise his intellectual faculties, we know he will improve them.

Secondly. From the existence of the effect we may infer the existence of the cause. Thus, if a servant enjoy in a high degree the confidence of his master, we may infer that he has served him well. If a man be involved in debts which he is unable to pay, we may infer that he has been either imprudent or unfortunate.

Thirdly. From the non-existence of the cause, we may infer the non-existence of the effect. Thus, if a man has not been unfortunate nor improvident, we may argue that he cannot be poor.

Fourthly. From the non-existence of the effect we may infer the non-existence of the cause. Thus, we may say, such a person is not poor; he cannot then have been extravagant. Such a person is not an intelligent man; he cannot, then, have spent much time in reading and study. He does not speak correctly; therefore he cannot have learned grammar.

3. In the relation of moral causes and effects, we have, in the first instance, to prove by reasoning that such a relation exists. If, for instance, I contend that education produces good morals, and hence, ask my neighbours to assist me in establishing a school for the poor,—I may be asked to prove, in the first instance, that education does produce good morals; for, unless I can prove the relation of cause and effect in this case, my efforts will be unavailing. So in many of the acts of ordinary life, and

in nearly all our public proceedings, whether a certain cause will produce a certain effect is, in fact, the whole question in dispute.

In reasoning upon moral causes, we are exposed to much difficulty from the circumstance, that one effect is often produced by a variety of causes. And the greatest sophistry arises from imputing to one particular cause an effect which results from the joint operations of many causes. Thus, the ruin of an individual may be the consequence of the accidental burning of his house; of imprudent conduct; of the treachery of friends, and of robbery by thieves. The fall of a state may be the effect of the united operation of a tyrannical government, a seditious people, the encroachments of a foreign enemy, and pestilence and famine. Now, should a person take the effect and argue that it was produced solely by one cause, he would be in error.

We shall also fall into error if we deny the existence of any one cause, because other causes contributed to produce the effect. Thus, it has been contended that Sir Robert Peel's Act for Regulating the Currency, passed in the year 1844, was a cause of the commercial distress that occurred in the year 1847. In reply, it was contended, that the distress of 1847 was produced by the famine in Ireland and the speculations in railways. Now this is no refutation of the former opinion; for all the three causes may have united in producing the same effect.

We should also fall into error were we to infer, that of two events one is the cause of the other, merely because it occurred first in the order of time. This fallacy is often ridiculed by a reference to the building of Tenterden steeple being the cause of the Goodwin sands. The story is told, I believe, by Bishop Latimer. There was a time when the Goodwin sands, which lie in the neighbourhood of Dover, did not exist. Sometime after they had collected, Government commissioners were appointed to ascertain the causes. They accordingly proceeded to the spot to examine witnesses. Among others an old man assured them that the cause of the Goodwin sands was the building of Tenterden steeple. They asked him how this could be. He stated, he could not tell how, but he

knew it was so; for he recollected that when there was no steeple there were no sands, but soon after the building of the steeple in came the sands. He, therefore, inferred that the building of the steeple was the cause of the sands.

We shall give an example of the way in which this allusion is applied.

The following argument is taken from the "Sophisms of Free Trade, by a Barrister."

"Whatever a man hears or reads constantly without contradiction, he is apt to believe: Sale, the translator of the Koran, by constantly poring over it, is said to have become a Mahometan.

"All great manufactures had their origin in the protective system. Take our own, the greatest and least sickly of any. All our own manufactures took their rise in a system of protective duties, so high as to amount to prohibitions. In addition to this, owing to the fearful hostilities that raged in Europe for nearly a quarter of a century before 1815, we enjoyed a further accidental monopoly of the manufacturing industry of the world. And this stringent protection has not only created manufactures, but created them where they would not naturally have existed, in spite of great natural disadvantages. Other nations have coal and iron ore as well as we. The United States are even richer in this respect. But other nations have also, what we have not, they have native raw materials. It has been justly observed, that Great Britain is singularly poor in the raw materials which constitute the basis of the greater portion of her manufacturing industry. We have no cotton, no silk, no fine wool. Even our best iron for the manufacture of hardware, comes from Sweden; our oils, gums, colours, woods, from the ends of the earth.

"Next to us in manufacturing industry, is France. Her manufacturing industry, though still inferior to ours, has nevertheless, since the peace, augmented in an even greater ratio, but under strict and jealous protection."—*Sophisms of Free Trade, by a Barrister.*

The following reply is taken from "Free Trade and its so-called Sophisms:"

"There is no doubt that, until recently, the governments of almost all countries considered that the way to establish an industry, and make it 'prosper, was to 'protect' it; and consequently, whenever an industry flourishes simultaneously with the existence of protection, a great shout of triumph is raised, as if the former were dependent on the latter—the old fallacy of

post hoc, ergo propter hoc. It is only necessary to refer to the well-known case of Tenterden steeple and the Goodwin sands for an illustration."—*Free Trade and its so-called Sophisms.*

The reader will observe, that the Barrister's argument with regard to manufactures is, that in several countries protection preceded prosperity; and he infers that protection was the cause of prosperity. His opponent replies, that though protection preceded prosperity, it was not the cause of prosperity; the two facts having no more relation to each other than Tenterden steeple and the Goodwin sands.

In order to prove that two events sustain the relation to each other of cause and effect, it is necessary to show, first, that the two events did actually occur; secondly, that the event which we call the cause, occurred in the order of time before the effect; and, thirdly, that there was an adaptation in the cause to produce the effect. In refutation we may state, that one or both of the two events did not occur—or that they did not occur in the order of time —or that there was no adaptation in the one to produce the other. We may go further, and maintain that the alleged cause, so far from being the cause, was an obstruction to the effect. The words, "in spite of," are sometimes used on such occasions. "Gentlemen, I contend that trade did not prosper *in consequence of* protection, but that it prospered *in spite of* protection."

4. Public measures are usually approved or condemned on account of the effects they are alleged to produce. Here is a wide field for controversy. The affairs of a nation are so multifarious, so many causes are perpetually at work, that it is difficult to trace with certainty the precise effects of any one cause. Even after measures have become law, and we have had some experience of their operation, the same difference of opinion is still maintained. If a measure already adopted is applauded on account of the good effect it has produced, we may contend in opposition to this, that the event, called the effect, has not taken place—or admit that the event has taken place, but was not the effect of that cause. Or, we may go further, and admit that the event was the effect of the cause, but that the effect was a bad effect. Or, we may go still further,

and admit that the effect was a good effect, and then contend that the same cause produced other effects of a different character, so that the bad consequences more than counterbalanced the good ones.

Sometimes it is matter of dispute, when two circumstances sustain the relation of cause and effect, which is the cause and which is the effect. Heretofore the landlords have been accused of keeping up the price of corn, by demanding high rents: but Dr. Chalmers observes that there is no sounder principle in political economy than that the high prices of corn are not the effect, but the cause of high rents. The country bankers were accused of causing a general rise in prices by an excessive issue of their notes; but they stated in reply, that it was not the increased issue of notes that caused the high prices, but the high prices called out the notes.

"The error of the Ricardo system of political economy on the subject of rent, has been well characterised by Mr. T. Perronet Thomson as the fallacy of inversion. It confounds the effect with the cause. It is not because of the existence of inferior soils that the superior pay a rent, but it is because the superior pay a rent that the inferior are taken into occupation. There does not occur to us any logical term by which to denominate the fallacy that is now under consideration; but it is not less a fallacy notwithstanding."—*Dr. Chalmers.*

If the effect may have been produced by several causes, and we can prove the absence of all the causes except one, this fixes the effect upon that one cause. We take the following extract from the Report of the General Board of Health on the Supply of Water to the Metropolis:—

"With respect to this case of Rotherhithe, the fact of the people in the first street mentioned having been the first victims in the great outbreak, shows that they must have been highly predisposed; and as they lived in decent houses, and were in comfortable circumstances, two of the more ordinary causes of the disease—overcrowding and poverty—could not have operated. Those considerations can leave no doubt that the one main cause of the great severity of the attack was the use for domestic purposes of polluted Thames water."

In investigating the relation of cause and effect, it is sometimes advisable not to stop at the immediate causes,

but to go further back, and ascertain what are the original causes of that immediate cause. It has been disputed whether the price of food has any influence on the rate of wages. It has been answered, No; for the rate of wages is regulated by the proportion between the demand for labour and the supply. Admitting the latter opinion to be correct, it does not refute the former; For the demand and supply of labour are influenced by anterior causes, and the price of food may be one of those anterior causes. So, we are told that the rate of interest is regulated by the proportion that may exist between the demand and the supply of capital. This throws but little light upon the matter, unless we are told at the same time what are the anterior causes that regulate this demand and this supply.

If it be a matter of dispute whether two events sustain the relation of cause and effect, we may be able to solve the difficulty, if it is found that the removal of the supposed cause is followed by the removal of the supposed effect. Thus, it was disputed whether the Act of 1844 for regulating the currency was the cause of the monetary pressure of 1847; but it was found that when the Act was suspended in October, 1847, the pressure immediately ceased.

"There was the case of a man who lived in the Coburg-road, in Camberwell parish, in a semi-detached house, in a healthy situation, and with a garden behind the premises; his wife had noticed that the water supplied to them was exceedingly bad, and, having been informed that it was likely to affect the health of her family, she invariably boiled and filtered it: all kept in perfect health except the father, who objected to drink this water, from its being flat and unaërated; he would still drink it as it came from the water-butt, and the consequence was that he was attacked with choleraic-diarrhœa: *he afterwards drank no more of it, and got well.*"—*Report of the Board of Health.*

5. We sometimes attempt to refute a doctrine by tracing the absurd consequences that must result from it. This is called by scholastic logicians *a reductio ad absurdum*—you reduce it to an absurdity.

"Away with the notion that wealth is an evil. If wealth be an evil, industry is a vice; for the tendency of industry is to produce wealth. If wealth be an evil, commerce should be abandoned; for the object of commerce is to acquire wealth. If

wealth be an evil, those efforts which are made by benevolence or patriotism, to improve the condition of the poor, are deserving, not of support, but of execration. But wealth is not an evil. However much the doctrine may have been countenanced by mistaken moralists or dreaming poets, it has never been generally acted upon, for it is one opposed to the common sense of mankind."—*Lectures on Ancient Commerce.*

It is not necessary, however, in this mode of reasoning, that the deduction should be *absurd*, in the ordinary sense of the word. It is sufficient if it shows the unsoundness of the sentiment from which it is fairly inferred. To prove the utility of money, show the evils that would arise from its abolition.

"What a useful thing is money! If there was no such thing as money, we should be much at a loss to get anything we might want. The shoemaker, for instance, who might want bread, and meat, and beer, for his family, would have nothing to give in exchange but shoes. He must go to the baker, and offer him a pair of shoes for as much bread as they were worth: and he must do the same thing if he went to the butcher for meat, or to the brewer for beer."—*Easy Lessons on Money Matters.*

To prove the utility of the institution of property, show the effects of its abolition.

"Can it be supposed that the poor would be better off if all the property of the rich were taken away and divided among the poor, and no one allowed to become rich for the future? The poor would then be much worse off than they are now. They would still have to work for their living, as they do now; for food and clothes cannot be had without *somebody's* labour. But they would not work near so profitably as they do now; because no one would be able to keep up a large manufactory or farm, well stocked, and to advance wages to workmen (as is done now), for work which does not bring in any return for, perhaps, a year or two."

"And if a bad crop, or a sickly family, brought any one into distress, which would soon be the case with many, what could he do after he had spent his little property? He would be willing to work for hire; but no one could afford to employ him, except in something that would bring in a very speedy return."

"It is plain from this, and from many other such injunctions of the apostles, that they did not intend to destroy, among Christians, the security of property which leads to the distinction between the rich and the poor. For, their exhortations to the rich, to be kind and charitable to the poor, would have been

absurd, if they had not allowed that any of their people *should* be rich. And there could be no such thing as *charity* in giving anything to the poor, if it were not left to each man's free *choice*, to give, or spend, what is his own. Indeed, nothing can be called *your own*, which you are not left free to dispose of as you will. The very nature of charity implies that it must be voluntary; for no one can be properly said to *give* anything that he has no power to withhold."—*Easy Lessons on Money Matters.*

"Were mankind not under the necessity of labouring for a subsistence, so far from becoming philosophers, I am inclined to think that they would ever have remained a race of indolent savages, scarcely raised above the brute creation. What motive would they have had for exertion, what incentive to awaken their faculties, and rouse them from the apathy of indolence so natural to man? The necessity of regular industry to secure subsistence appears to be the first step towards the development of their faculties, both physical and mental."—*Mrs. Marcet's Conversations on Political Economy.*

Sometimes we meet with zealous advocates, who reduce their own principles to an absurdity by deducing from them extravagant conclusions. Dr. Chalmers adopted the Malthusian theory of population, and drew from it such startling, and yet apparently legitimate conclusions, that his readers were led to doubt the soundness of the theory: They judged of the tree by its fruits. Dr. Alexander, of Edinburgh, in an address respecting recent events, has pointed out a similar example in the conduct of some advocates of a popular principle:—

"It is possible to drive a good horse to death; it is equally possible to drive a sound principle to weakness and contempt. Mr. Holloway's pills are, we believe, very fair and honest sort of pills, and very good for some purposes; but when Mr. Holloway advertises them as good for *every* disease the human body is heir to, sensible people are apt to treat Mr. Holloway as a quack, and his pills as trash. We fear the voluntary principle is about to be served in the same way. With some people it seems the one truth for the age. It is the grand religious catholicon—the panacea of piety—like the mistletoe of the Druids, a heal-all for the ills of the community. We dread the effect of this indiscreet advocacy on the minds of the nation at large. We fear that it will retard, rather than promote, the cause of voluntaryism. We fear lest, when men are incessantly told that it is good for everything, they will turn from it in disgust, and hold it to be good for nothing."

If an absurd conclusion can be legitimately deduced from any general principle, it is a sufficient proof that the principle is unsound; but in this case we should carefully investigate the logical accuracy of the deduction, for weak or zealous advocates will sometimes make extravagant deductions from sound principles.

6. Akin to the reduction *ad absurdum* is an exposure of the fallacy called proving too much. This fallacy is an argument that, if admitted to prove the point in dispute, would, if carried out to all its legitimate consequences, also prove other points that neither of the disputants admit to be true.

As an example of proving too much, we may adduce all the arguments that go to prove the impropriety of closing the post-offices throughout the country on the Sunday; for if these arguments prove the point in regard to provincial towns, they also prove the propriety of opening the post-office on Sunday in London. But if the argument fails when applied to London, then, *à fortiori*, it must be inconclusive when applied to a country town. This argument can be resisted only by showing that there are peculiar circumstances in the country which do not apply to London.

So the argument of Mr. Cobden against granting loans to the Emperor of Russia: for if it were immoral to lend money to the Emperor because he might employ it in carrying on war against the Hungarians, then by parity of reasoning it would also be immoral to have any transactions with him by which his finances might be improved. And hence, all trade with Russia should cease. Upon the same ground, we ought to abstain from the use of sugar and cotton, and all other commodities which are produced by the labour of slaves, if by using them we increase the property of those who, in defiance of all the principles of morality, hold in bondage their fellow-man.

7. Arguments founded on the advantages or disadvantages that may result from any measure under consideration, come under the head of reasonings from the relation of cause and effect.

"Whatever objections may be advanced against the funding system, it is certainly productive of some advantages. By

enabling the Government to raise large sums of money in a short time, we are guarded against the evils of sudden emergencies. By making it the interest of a large body of fundholders to support the existing Government, it promotes internal tranquillity. By providing a new deposit, in which individuals may place their savings with confidence as to the security of both principal and interest, a great stimulus is given to industry and frugality. By the facilities of transfer, a great convenience is granted to commerce. Almost every respectable family in the kingdom is in some way or other connected with the funds; and it is a matter of importance, not only to large capitalists, but to persons of inferior wealth, to obtain a knowledge of the most advantageous way of making their investments."—*Anon.*

As a further illustration of this principle, we transcribe part of a prize essay, written by Mr. Briggs, a working millwright, upon the advantages likely to be gained by working men visiting the Industrial Exhibition of the present year :—

"The working man, let him be engaged in whatever kind of labour or handicraft, by attending the Exhibition, will find information, valuable and essentially useful to him. The mechanic, and the worker in metals, will be able there to trace the mineral as it appears when first dug from mother earth, through all its varied processes, till finished in the powerful and almost intellectual steam engine. The workers of textile fabrics will there be able to inspect the silk as produced from the silk-worm, and the cotton from the plant, tracing their progress until, by the aid of man and machinery, they appear in the finished fabric, exhibiting the greatest beauty of design and skilful workmanship. The workman, at this Exhibition, will be able to compare the textile and other productions of France, the marble productions of Florence, and specimens of art and science from all parts of the Continent, with those exhibited by our country, and perceive that the respect in which our continental neighbours excel us is in fertility and beauty of design. He will see that no nation executes so well as the English; that we stand unrivalled in the superiority of our workmanship; and that the only thing we are short of is design. And if a visit to the Exhibition conduce to the cultivation of a superior style of design among our artisans, it will repay a hundred-fold any expense they may incur by attending it, and confer lasting benefit on their country, for the acknowledged character of the British, as the most skilful of workers, added to that of superior designers, would always demand for us a trade which would proudly and successfully outstrip every other nation in the world in the race of competition. The history of the marble trade in

my native county of Derbyshire, is a striking illustration of the truth of this. Twenty or thirty years ago the art of inlaying in marble was not known there. And why is it known now? Because the museums of Matlock and Buxton imported from Florence, Rome, and other parts of Italy, specimens of the art, which were seen and imitated by the workers of Derbyshire; until at length they are able to equal, and, in some respects, surpass the productions of Florence. And if the small exhibition of Matlock has been the means of producing an entirely new and beautiful art amongst the inhabitants of the Peak of Derbyshire, what may we confidently expect to result from this great and mighty Exhibition, which, in comparison to that at Matlock, is like the broad Atlantic to a gentleman's fish-pond. The great want of our country is design; we have no other want that prevents us from successfully competing with foreigners. Then let our artisans attend this Exhibition, and ascertain where and in what they excel them; and it will propel the current of improvement at home, and thus minister to their advantage, and to the comfort and happiness of the whole people."

8. We shall close this section with a few examples of this principle of reasoning, applied to some measures of public interest:—

"Repeal of Advertisement Duty.—A strong effort will be made in the coming session of Parliament, to obtain a repeal of the tax on advertisements. Looked at from any point of view, this tax is perhaps the pettiest and most mischievous on the Chancellor's list. Its advantage as a source of revenue, bears no tolerable proportion to its disadvantages in other respects. Bringing into the Exchequer the comparatively inconsiderable sum of £150,000 a-year, it acts on the convenience of the public more mischievously, than would ten times the amount levied in a different manner. Its effect is to impede, to an immense extent, advertisement in journals. In America, every man who wishes to lend or to hire—to buy or to sell—announces his wish to his townsmen for a shilling; the same announcement in England would cost him five shillings at least. But this difference in cost is the smallest part of the evil. In consequence of the freedom from taxation, the American journals are cheap—everybody reads them. The advertiser is, therefore, sure of his market. There is scarcely any single thing that one man has to offer, which there is not some other man who wants, if the means of finding the latter by a medium of universal communication were established. The English journals are dear, and are read by a comparative few. The advertiser is, therefore, driven to seize on waste walls, the doors of empty houses, the arches of bridges, the inside of omni-

buses, the outsides of travelling vans,—and whatever surface is certain to meet the public eye, and can evade the tyrannical letter of the advertisement duty. Even thus, the announcement that would be effectively made in New York in a dozen newspapers, for as many shillings, must be pictured on the walls of London at a cost of as many pounds to insure an equal amount of publicity—the stamp office losing its tollage notwithstanding. The wrong galls both ways. By the exaction of the duty the newspaper is kept down in circulation, and thus rendered a worse advertising medium, and the buyer and seller are forced on a mode of soliciting the public attention which involves yet more cost and trouble. In the case of literary works striving at cheapness, the case is particularly hard, the cost of the needful advertisement sometimes amounting to more than the whole profit of author and publisher on works which are successful. We have heretofore pointed out other evils which grow under the forcing process of this duty. This and the penny stamp are the most frightful causes of that popular ignorance which statesmen affect so much to deplore."—*Athenæum.*

"RIGHTS AND DUTIES OF A LANDLORD. — Lord Harewood, to get rid of the evil of over-crowding in country villages, refuses to permit his cottage tenantry to take lodgers, or to allow a son or daughter to marry from the cottage, and continue to occupy it with the wife or husband conjointly with the parents. The first of these regulations is one with which every landlord is familiar. The offence lies in the second, which has been interpreted to mean a prohibition to the poor to marry; and some country newspaper talks about feudal laws, and we know not what besides. Now the regulation means nothing of the sort. It is a simple refusal on the part of Lord Harewood to permit persons to continue his tenants who marry without the power of *having a house of their own.*

"Now we are quite satisfied that it is the bounden duty of a landlord to put every check in his power upon the mania of the poor for headlong marriages. God forbid we should attempt to restrain them from marrying at all. But in the name of morality and decency, let them wait till they have a chair and bed of their own. Without question or doubt, nine-tenths of agrarian misery, pauperism, and crime, arise from the extraordinary hurry and recklessness of the poor in marrying early. It is a madness—neither more nor less. A young woman in the country is never satisfied till she has got a sweetheart. As soon as she has caught her Lubin, she must needs fix him, lest, as she says, "next time she should get a worse." And so, in one half-year, a tidy lad and decent lass become a couple of ragged, ill-looking, slovenly trampers. Let them only do as all other members of society do,

from the top of the ladder downwards, until it reaches themselves —let them be patient and provident—let them stay till they have bought a pot to boil their potatoes in, and a sack in advance;—many a couple begin life without either. The poor obtain a multitude of advantages by delay; they start fair—they learn carefulness—they have an idea of comfort, and some notion of character; and, more than all—Malthusian though the consideration be—they will find four children much easier to bring up than fourteen.

If the details of the courtship first, and the marriage afterwards, of nine out of ten country couples could be laid openly and truly, the lesson would be much more instructive than those 'On Labour and the Poor,' about which so much has been said of late. The instances adduced would not be exceptional—to begin with. And then there is some use in the delineation of evils of which we see the remedy. The upper classes could prevent the folly, if they chose. To be sure, we should hear a great deal of interference with the poor, and that sort of thing. But, bad as we admit interference to be, it is better to interfere with persons with a chance of happiness before them, than to interfere afterwards by sending them to the treadmill, or shutting them up in the poor-house. The path to the altar, as things are, is about the surest to a gaol that poverty can take.

"A landlord has an unquestioned right to keep bad characters from his cottages. He owes this duty to himself and to his honester tenants. He has an equal right to exclude those who, from their circumstances, are certain—we use the word advisedly —to become bad characters. In the last case he may prevent, not the contagion alone, but the evil itself. If this right were used, cautiously and yet firmly, throughout the country, the villages would not be what they are."—*Atlas.*

"CRIME—THE CAUSE OF ITS INCREASE.—The case of Professor Webster has excited among the philanthropists of the United States no small concern of late, giving intensity to the controversy which has for years been going on between the advocates of death punishment and its opponents, who have, in perfect consistency, clamoured most vehemently for the preservation of the life of this execrable monster of human depravity. But notwithstanding the clamour of a few, the voice of the millions, as with the sound of many waters, has called for his execution. In truth, the people of Massachusetts were in some degree prepared for decision in this case, inasmuch as past leniency has materially contributed to the increase of crime, as will appear from the following extract from a transatlantic paper of great respectability:—

"It appears from Governor Briggs's annual address to the Legislature, that there has been for the last ten years a great

increase of convicts in our State Prison. The way in which some, and, if we remember right, the Governor with the rest, account for the increase, is that the sentences of the courts have been much less severe than formerly. We will not undertake to say how much of the effect is to be attributed to this cause. But there has been another cause of more evident potency. The last ten years have been specially marked by the efforts of the so-called prisoner's friends, alias criminal's aids. The class of people, called by courtesy the Philanthropists, have worked with no little energy a broad machinery, not only against capital punishment, but really against all punishments. From them the sentiment has had a wide diffusion, that crime is a mere disease or misfortune, deserving to be treated with medicine rather than with punishment; and, to some extent, the idea has been conveyed, that the robber, thief, and murderer, have a sure passport to public sympathy. Now, what else could we expect, than that this class of operatives would be greatly increased? What is more natural than that the demand should create the supply?

"And if the leniency of the courts has been a cause cooperating, that itself has had a cause. If the courts have been unduly lenient in the administration of the laws, it has doubtless been by yielding to a morbid public sentiment, which to them has seemed to require it. And how has that sentiment been created? Either way we come to the conclusion that it is our spurious philanthropists that have added so many recruits to the army that wars upon the peace, property, and lives of the community. At any rate; the fact that a time which has been distinguished for unusual leniency in punishments, has been as distinguished for the increase of crime, is a very effectual condemnation of the theory of those philanthropists."—*British Banner.*

"ABOLITION OF THE OFFICE OF LORD LIEUTENANT OF IRELAND.—In the first place, the office of Lord-lieutenant is an anomaly for which the reason and justification ceased, when the modern improvements in locomotion, both by sea and land, made the communication between London and Dublin as easy and regular as that between London and York. Secondly, the separate form of government tends to divide the people of Ireland from the people of Great Britain, to keep up separate views, ideas, and sentiments, unfounded notions of an opposition of interests, mutual jealousy, ignorance, and estrangement. Thirdly, it involves a division of responsibility, a clashing of authorities, a confusion of jurisdictions, which impede the march of government, and tend to weaken and retard it, when vigour and promptitude are of the most consequence. Fourthly, the local government of Ireland tends more than any other cause we know of, to encourage that inveterate and fatal habit to which Irishmen of

all classes and positions are so notoriously addicted,—the habit of leaning upon Government in all their difficulties, instead of depending upon their individual resources and relying upon themselves. Of this pernicious effect of the Lord-lieutenancy no Viceroy ever had larger experience than Lord Clarendon; though this is one of those cases in which, as we have already remarked, the personal character of the holder of the office may sometimes be remedial of its defects,—and certainly Lord Clarendon has omitted no opportunity to correct by sage advice and fearless remonstrance this, as well as many other Irish failings. We shall only mention one objection more; the peculiar exposure of the government of Ireland, seated at Dublin Castle, to the fury of demagogues and factions in periods of popular excitement. This last objection was strongly put by the Prime Minister in his speech introductory of the bill announced last session to abolish the Viceroyalty. To concur in the policy of that measure is perfectly consistent with our sense of Lord Clarendon's services. A system of government of the most objectionable nature will often be productive of much good in the hands of an able minister, who will employ to the best advantage the means of usefulness it affords, and cover with his own talents and efficiency the intrinsic defects in the constitution of his office."—*Edinburgh Review.*

SECTION VI.

CONDITIONAL CAUSES.

A CONDITIONAL cause is a circumstance, or state of things, which is necessary to the production of an effect, but which does not actively produce that effect.

Thus, if a man fall from his horse, it is a necessary condition that he should previously have been on his horse, otherwise he could not have fallen. If a man is hanged for forgery, the active or efficient cause of his being hanged is the commission of the crime; but if he had never learned to write, he could not have committed a forgery; hence his knowledge of writing is a necessary condition.

As the condition does not thus actively, or necessarily produce the effect, we do not usually use the words "conditional cause" and "effect," but we say the "condition," and the "sign." Thus, a physician feels the pulse of his patient, to ascertain the state of his health; the state of

health is the condition, the state of the pulse is the sign. Now, a man may be in a bad state of health, and yet his pulse may be regular: the existence of the condition is no proof of the existence of the sign. But if the pulse be irregular, it shows that the health is disturbed: the existence of the sign is a proof of the existence of the condition.

So it is a necessary condition to the performance of any act, that the man who performs it should be alive. Now then, if a will is produced of a date some years subsequent to the death of the alleged testator, it proves that the will is a forgery. The man might have been alive without making a will, but he could not have made a will unless he had been alive. The condition must have preceded the sign.

1. This relation of condition and sign supplies us with two modes of reasoning. From the non-existence of the condition, we infer the non-existence of the sign; and from the existence of the sign we infer the existence of the condition. But we cannot reverse either of these rules. You will say, "This requires explanation." So it does. Have a little patience, and I will explain it. But first, put a pencil mark in the margin, that if you should not clearly understand my explanation, you may be able to turn back to it again.

Now then, mind, we say that the non-existence of the condition proves the non-existence of the sign. If a man has committed murder, it is a necessary condition that he should have been at the *place* when the murder was committed, and at the *time* the murder was committed. Now, if he can prove an *alibi*, (this word is Latin for *elsewhere*,) that is, if he can prove that he was at a distant place at the time the murder was committed, this proves that he did not commit the murder. The non-existence of the condition proves the non-existence of the sign. But you cannot reverse this rule. The existence of the condition will not of itself prove the existence of the sign; for he might have been at the place where, and at the time when, the murder was committed, and yet might not have committed the murder. It might have been committed by some of his companions.

The second rule is, that the existence of the sign proves the existence of the condition. Take the same instance.

If a man is proved to have committed a murder, it proves the condition, that he was at the place where, and at the time when, the murder was committed. But if it is proved that he did not commit the murder, that is in itself no proof that he was not present when the murder was committed. The non-existence of the sign is no proof of the non-existence of the condition.

2. You will also observe, that much erroneous reasoning has taken place from confounding the conditional with the active cause. It has been said that the Reformation was the cause of all the wars in Germany in the fifteenth century. The Reformation was certainly a condition, for if there had been no Reformation, there could have been no fighting about it. But it was only the condition, the active cause of those wars was the interference of those hostile parties, who would not allow the people to follow the convictions of their own judgments.

In the following argument the existence of the condition is insisted on as essential to the sign.

"No man will excel in his profession if he thinks himself above it; and commerce will never flourish in any country where commerce is not respected. Commerce flourished in England, because there a merchant was respected, and was thought worthy of the highest honour his country could bestow. Commerce never flourished in France, because there it was despised; and the character of *un riche bourgeois*, a rich citizen, was the character which their dramatic writers were fond of introducing as the subject of ridicule. Commerce will never flourish in a country where young men, whose fathers are barely able to maintain a genteel appearance, think it beneath their rank to enter a counting-house, and prefer sustaining the character of segar-smoking loungers. Commerce will never flourish in a country where property acquired by industry is considered less deserving of respect than property acquired by inheritance. Commerce will never flourish in a country where men in business, instead of bringing up their sons to the same business, think it more respectable to send them to professions. Commerce will never flourish in a country where men, as soon as they get a few thousand pounds by trade, are anxious to get out of trade, and to mix with the society of the fashionable world."—*Lectures on Commerce.*

3. This principle of reasoning is used very extensively in the examination of evidence adduced in our Courts of Law.

Sometimes parties are accused of crimes, to the perpetration of which there were no witnesses. Their guilt is inferred from the circumstances of the case. This is called "circumstantial evidence," and sometimes "presumptive evidence," as the guilt is *presumed* from the circumstances adduced. Some lawyers have maintained that circumstantial evidence is more conclusive than direct evidence, as there is no danger from the perjury of the witnesses. But others have thought differently. No certain rules can be given for circumstantial evidence. Each cause must depend upon itself. The reader will remember, that within a short period, several atrocious criminals have been convicted upon circumstantial evidence.

The following are some general remarks on this kind of evidence:—

"The force and effect of circumstantial evidence depend upon its incompatibility with, and incapability of, explanation or solution upon any other supposition than that of the truth of the fact which it is adduced to prove; the mode of argument resembling the method of demonstration by the *reductio ad absurdum.*"

"These circumstances may be considered under the heads of—motives to crime,—declarations indicative of intention,—preparations for the commission of crime,—possession of the fruits of crime,—refusal to account for appearances of suspicion, or unsatisfactory explanations of such appearances,—evidence indirectly confessional,—and the suppression, destruction, simulation, and fabrication of evidence."

"The principal facts of circumstantial evidence, of an external character, relate to questions of identity,—(1) of person; (2) of things; (3) of hand-writing; and (4) of time; but there must necessarily be a number of isolated facts which admit of no more specific classification."

"Since an action without a motive would be an effect without a cause, a presumption is created in favour of innocence from the absence of all apparent inducement to the commission of the imputed offence. But the investigation of human motives is often a matter of great difficulty from their latency or remoteness; and experience shows that aggravated crimes are sometimes committed

from very slight causes, and occasionally even without any apparent or discoverable motive. This particular presumption would therefore seem to be applicable only to cases where the guilt of the individual is involved in doubt; and the consideration for the jury in general is rather whether upon the other parts of the evidence the party accused has committed the crime, than whether he had any adequate motive."

"Since falsehood, concealment, flight, and other like acts, are generally regarded as indications of conscious guilt, it naturally follows, that the absence of these marks of mental emotion, and still more a voluntary surrender to justice, when the party had the opportunity of concealment or flight, must be considered as leading to the opposite presumption; and these considerations are frequently urged with just effect, as indicative of innocence; but the force of the latter circumstance may be weakened by the consideration that the party has been the object of diligent pursuit. It must be also remembered, that flight and other similar indications of fear may be referable to guilt of another and less penal character than that involved in the particular charge."

"If it be proved that a party charged with crime has been placed in circumstances which commonly operate as inducements to commit the act in question,—that he has so far yielded to the operation of those inducements as to have manifested the disposition to commit the particular crime,—that he has possessed the requisite means and opportunities of effecting the object of his wishes,—that recently after the commission of the act he has become possessed of the fruits or other consequential advantages of the crime,—if he be identified with the *corpus delicti* by any conclusive mechanical circumstances, as by the impressions of his footsteps, or the discovery of any article of his apparel or property at or near the scene of the crime,—if there be relevant appearances of suspicion, connected with his conduct, person, or dress, and such as he might reasonably be presumed to be able to account for, but which nevertheless he cannot or will not explain,—if he be put upon his defence *recently* after the crime, under strong circumstances of adverse presumption, and cannot

show where he was at the time of its commission,—if he attempt to evade the force of those circumstances of presumption by false or incredible pretences, or by endeavours to evade or pervert the course of justice by conduct inconsistent with the supposition of his innocence,—the concurrence of all or of many of these cogent circumstances, unopposed by facts leading to a counter presumption, naturally, reasonably and satisfactorily establishes the moral certainty of his guilt, —if not with precisely the same kind of assurance as if he had been seen to commit the deed, at least with all the assurance which the nature of the case and the vast majority of human actions admit. In such circumstances we are justly warranted in adopting, without qualification or reserve, the conclusions to which, 'by a broad, general, and comprehensive view of the facts, and not relying upon minute circumstances with respect to which there may be some source of error,' the mind is thus naturally and inevitably conducted, and in regarding the application of the sanctions of penal law as a mere corollary. Nor can any practice be more absurd and unjust, than that perpetuated in some modern codes, which, while they admit of proof by circumstantial evidence, inconsistently denies to it its logical and ordinary consequences."—*Wills's Principles of Circumstantial Evidence.*

It may be observed that the conclusiveness of circumstantial evidence does not depend upon the force of any one circumstance, but upon the strength of the whole united. If we see a man coming out of a house, with blood on his clothes, that is no proof that he has committed murder. There are many other ways in which his dress may have become bloody. But if we enter the house, and find there a person who has the appearance of having been recently murdered, this causes the former individual to become suspected. If, again, you find the hat of this person in the house of the murdered man; and when this person is apprehended, he denies ever having been in the house; and, moreover, you find concealed in his dress some property proved to have belonged to the man who was murdered;—now, putting these and similar circumstances together, you may have sufficient proof of the prisoner's guilt; for although you might easily assign other causes

for any one of these circumstances separately, you cannot assign sufficient causes to account for them all, except on the supposition that the prisoner is the man who has committed the crime. In cases of this kind the prisoner's counsel exercises his ingenuity in assigning other causes to account for these criminating appearances. And some barristers think themselves justified in doing this, even after the prisoner has confessed his guilt. Lawyers of high standing have declared that such conduct is not, in their judgment, a violation of *professional* morality.

It must also be observed, that if the circumstances brought in evidence against a prisoner can be accounted for on any other supposition than his guilt, he is entitled to an acquittal. The evidence must prove, not merely that he may be guilty, but that he must be guilty. The circumstances adduced must be wholly incompatible with the supposition that he is innocent, and incapable of explanation upon any other hypothesis than that of his guilt. It is upon this kind of evidence that most criminals are convicted. As crimes are usually committed in secret, witnesses can rarely be obtained, and circumstantial evidence is the only evidence that can be adduced; and Providence seems always to have arranged that all great crimes shall in this way be brought to light. Plans hatched with consummate ingenuity, and in profound secrecy, have in their execution been attended with some slight oversight, which has supplied a thread by which the whole plot has been unravelled. True, some persons convicted upon circumstantial evidence have afterwards been proved to be innocent; so also persons convicted upon direct evidence have afterwards been proved to be innocent. If, on the one hand, circumstances may seem to warrant an erroneous conclusion, on the other hand you may have mistaken or perjured witnesses.

4. Circumstantial evidence is also employed by theologians. Under this principle of reasoning we may class Paley's Horæ Paulinæ, and similar works, designed to prove the authenticity of the sacred writings. This work of Paley is confined to the consideration of the Acts and the Epistles. It does not attempt to prove they are genuine, but to prove they are not forgeries. The result is the same, but

the mode of reasoning is different. It is presumed that some party has accused these books of being forgeries; and the reasoning is to show, by circumstantial evidence, that the accusation is not true. The evidence is derived from the writings themselves, and rests upon the incidental coincidences that occur between the "Acts of the Apostles" and the "Epistles." The following examples are taken from Paley :—

"In the Acts of the Apostles, in the sixteenth chapter, and at the first verse, we are told that Paul 'came to Derbe and Lystra: and, behold, a certain disciple was there, named Timotheus, the son of a certain woman, which was a Jewess, and believed; but his father was a Greek.' In the epistle before us, in the first chapter, and at the fourth and fifth verses, St. Paul writes to Timothy thus: 'Greatly desiring to see thee, being mindful of thy tears, that I may be filled with joy; when I call to remembrance the unfeigned faith that is in thee, which dwelt first in thy grandmother Lois, *and thy mother Eunice*; and I am persuaded that in thee also.' Here we have a fair, unforced example of coincidence. In the history Timothy was the 'son of a Jewess *that* believed:' in the epistle St. Paul applauds 'the *faith* which dwelt in his mother Eunice.' In the history it is said of the mother, 'that she was a Jewess, and believed:' of the father, 'that he was a Greek.' Now when it is said of the mother *alone* 'that she believed,' the father being nevertheless mentioned in the same sentence, we are led to suppose of the father that he did not believe, that is, either that he was dead, or that he remained unconverted. Agreeably hereunto, whilst praise is bestowed in the epistle upon one parent, and upon her sincerity in the faith, no notice is taken of the other. The mention of the grandmother is the addition of a circumstance not found in the history; but it is a circumstance which, as well as the names of the parties, might naturally be expected to be known to the apostle, though overlooked by his historian."

"Chap. v. 23. 'Drink no longer water, but use a little wine for thy stomach's sake and thine often infirmities.'

"Imagine an impostor sitting down to forge an epistle in the name of St. Paul. Is it credible that it should come into his head to give such a direction as this; so remote from every thing of doctrine or discipline, every thing of public concern to the religion or the church, or to any sect, order, or party in it, and from every purpose with which such an epistle could be written? It seems to me that nothing but reality, that is, the real valetudinary situation of a real person, could have suggested a thought of so domestic a nature.

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"But if the peculiarity of the advice be observable, the place in which it stands is more so. The context is this: 'Lay hands suddenly on no man, neither be partaker of other men's sins: keep thyself pure. Drink no longer water, but use a little wine for thy stomach's sake and thine often infirmities. Some men's sins are open beforehand, going before to judgment; and some men they follow after.' The direction to Timothy about his diet stands between two sentences, as wide from the subject as possible. The train of thought seems to be broken to let it in. Now, when does this happen? It happens when a man writes as he remembers: when he puts down an article that occurs the moment it occurs, lest he should afterwards forget it. Of this the passage before us bears strongly the appearance. In actual letters, in the negligence of real correspondence, examples of this kind frequently take place; seldom, I believe, in any other production. For, the moment a man regards what he writes as a *composition*, which the author of a forgery would, of all others, be the first to do, notions of order, in the arrangement and succession of his thoughts, present themselves to his judgment, and guide his pen."

A new edition of Paley's Horæ Paulinæ has recently been published by the Religious Tract Society, with large additions by the Rev. T. R. Birks, late Fellow of Trinity College, Cambridge. We take the following example from Mr. Birks:—

"2 Tim. iv. 13, 21. 'The cloak that I left at Troas with Carpus, when thou comest, bring with thee, and the books, but especially the parchments.'

"'Do thy diligence to come before winter.'

"The deep and touching significance of this direction, however trivial it may seem, has been beautifully explained by Mons. Gaussen, in his Theopneustia.

"'During near thirty years he had been poor, in labours more abundant than others, in stripes above measure beyond them, in prisons more frequent than they: of the Jews he had five times received forty stripes save one, thrice he had been beaten with rods, once stoned, thrice shipwrecked, in journeyings often, in perils at sea, in towns, in deserts, among the heathen, and among his own countrymen, in watchings often, in hunger and thirst, in cold and nakedness, with the care of all the churches. He was now Paul the aged, and in his last prison at Rome, expecting the sentence of death, and ready to be offered; he had fought a good fight, finished his course, and kept the faith. Even his friends had shrunk from him on his first arraignment; only Luke was

with him, the rest had left or forsaken him; the winter was about to set in, and in the chilly dungeons of Rome he was in want of his cloak, which he had left with Carpus at Troas, two hundred leagues away. The writer was himself in Rome last year, at the commencement of November; and with what vivid reality, under the influence of the evening cold, could he imagine the aged apostle in the dungeons of the Capitol, dictating the last of his letters, regretting the absence of his cloak, and begging Timothy to bring it before winter.'

"In another view, these passages bear the same impress of reality. The apostle had wintered at Nicopolis, journeyed northward early in the spring, dismissed Titus to Dalmatia, crossed Macedonia by the Egnatian Way to Neapolis, and embarked for Troas; proceeded to Miletus, and in that neighbourhood been seized, examined, and sent off to Rome, from whence he writes to Timothy, in time for him to return, but only with a speedy journey, before winter sets in again. From this outline, deduced by a careful comparison of many scattered hints, about what time would he have passed through Troas? Most probably, about the month of May. How natural for him to leave his cloak behind, when the summer months were now begun, and especially if he purposed to return by the same route, so as to winter in Thrace or Macedonia! Yet, as Mr. Biley has justly observed, 'there is no allusion to the season in the first letter to Timothy; no allusion to the proposed return to Asia after the winter, in that to Titus; no allusion to the winter at Nicopolis, or to the second interview with Timothy, in the present letter. The harmony is as completely hidden below the surface as it could possibly be!'"

A similar work has been published by the Rev. J. J. Blunt, B.D. Margaret Professor of Divinity, Cambridge, entitled, "Undesigned Coincidences in the Writings both of the Old and New Testament, an Argument of their Veracity." We take an example from this work:—

"Towards the end of the famine caused by this drought, Elijah is commanded by God to 'get him to *Zarephath*, which *belongeth to Zidon*, and dwell there;' where a widow-woman was to sustain him.* He goes; finds the woman gathering sticks near the gate of the city; and asks her to fetch him a little water and a morsel of bread. She replies, 'As the Lord thy God liveth, I have not a cake, but an handful of meal in a barrel, and a little *oil* in a cruse: and, behold, I am gathering two sticks, that I may go in and dress it for me and my son, that we may eat it, and die.' †

* 1 Kings xvii. 9. † 1 Kings xvii. 12.

"This widow-woman, then, it seems, dwelt at *Zarephath*, or Sarepta, which belongeth to *Zidon*. Now, from a passage in the book of Joshua,* we learn that the district of Zidon, in the division of the land of Canaan, fell to the lot of Asher. Let us, then, turn to the thirty-third chapter of Deuteronomy, where Moses blesses the tribes, and see the character he gives of this part of the country: 'Of Asher he said, Let Asher be blessed with children; let him be acceptable to his brethren, and let him dip *his foot in oil*;'† indicating the future fertility of that region, and the nature of its principal crop. It is likely, therefore, that at the end of a dearth of three years and a half, *oil* should be found there, if anywhere. Yet this symptom of truth occurs once more as an ingredient in a miraculous history—for the oil was made not to fail till the rain came. The incident itself is a very minute one; and minute as it is, only discovered to be a coincidence by the juxtaposition of several texts from several books of Scripture. It would require a very circumspect forger of the story to introduce the mention of the oil; and when he had introduced it, not to be tempted to betray himself by throwing out some slight hint why he had done so."

"In every narrative," observes Paley, "we perceive simplicity and undesignedness,—the air and the language of reality. When we compare the different narratives together, we find them so varying as to repel all suspicion of confederacy; so agreeing under this variety, as to show that the accounts had one real transaction for their common foundation; often attributing different actions and discourses to the Person whose history, or rather memoirs of whose history, they profess to relate; yet actions and discourses so similar as very much to bespeak the same character, which is a coincidence that, in such writers as they were, could only be the consequence of their writing from fact, and not from imagination." —*Evidences of Christianity.*

I know of no better mode of training the reasoning faculties than the perusal of works like these.—They require not extensive information nor profound thinking. The mode of reasoning is familiar to the apprehension of a child. It is reasoning made easy. At the same time, the facts investigated are very interesting, and the lessons acquired are of the utmost importance. The circumstances of each case, too, have so much similarity with the

* Josh. xix. 28. † Deut. xxxiii. 24.

transactions of ordinary life, as to give an aptitude for discussing the affairs of daily occurrence. The reader will observe that all this reasoning is founded on the second rule of circumstantial evidence; that is, from the existence of the sign we prove the existence of the condition; or, as it has been otherwise expressed, the existence of the consequent proves the existence of the antecedent. Upon the supposition that these writings are forgeries, the circumstances mentioned could not have occurred. We know this from our own common sense, and from our knowledge of human nature and of human affairs. Upon the supposition that these writings are genuine, these circumstances would naturally occur; and hence, from the existence of the sign, we prove the existence of the condition.

5. Circumstantial evidence is employed too with reference to the affairs of ordinary life. Bankers, merchants, and traders judge by this kind of evidence of the solvency and responsibility of the parties with whom they deal. The actual amount of a man's property is probably known only to himself. His standing on the exchange or in the market will depend upon his personal character, his business habits, his conformity to established rules, and the extent to which he practises those moral virtues which are known to be the surest guide to wealth. We are told that "it is of great importance to a banker to have an ample knowledge of the means and transactions of his customers. The customer, when he opens his account, will give him some information on this subject. The banker will afterwards get information from his own books. The amount of transactions that his customer passes through his current account, will show the extent of his business. The amount of his daily balance will show if he has much ready cash. The extent and character of the bills he offers for discount, will show if he trust large amounts to individual houses, and if these are respectable. On the other hand, the bills his customer may accept to other parties, and his payments, will show the class of people with whom he deals, or who are in the habit of giving him credit."* "Next in importance to a study of his accounts, the habits and

* Gilbart's Practical Treatise on Banking.

character of a client are deserving of your attentive consideration. If a man's style of living, for example, becomes extravagant, and he gives himself over to excess, you cannot too promptly apply the curb, however regular the transactions upon his account may seem."*

Now, this is judging from circumstantial evidence. By the same kind of evidence we are guided in our domestic adjudications. By this mode of reasoning we judge of the honesty of our servants, of the truthfulness of our children, and of many other transactions connected with family discipline. By this mode too we often judge of the sincerity of our friends, and of the character of public men.

6. The Scriptures furnish us with a good many instances of both right and wrong judgments founded on circumstantial evidence. Saul put to the sword the priests of the Lord upon circumstantial evidence. The high priest had given bread to David's troop, had supplied him with a sword, and had inquired of God for him. He made a most logical defence:—He had been in the habit of inquiring of God for him. David was the king's son-in-law; he was a distinguished man in the nation; and the high priest did not know that a rupture had taken place between him and Saul. Samuel convicted Saul of disobedience and falsehood by circumstantial evidence. Saul said: "I have performed the commandment of the Lord." Samuel said: "What meaneth then this bleating of the sheep in mine ears, and the lowing of the oxen which I hear?" Peter was accused upon circumstantial evidence. He was a Galilean; he spoke a provincial dialect; and he had been seen in the garden—all these circumstances seemed to warrant a suspicion that he also "was one of this man's disciples." St. Paul was accused upon circumstantial evidence. The charge was, that he had defiled the temple: the proof was, that he had been seen walking the streets of Jerusalem in company with Trophimus, an Ephesian. The tribes beyond Jordan were accused of idolatry, upon circumstantial evidence. They had built an altar. It was shown that this altar was not intended for sacrifice.

* The "Internal Management of a Country Bank," by Thomas Bullion.

SECTION VII.

THE RELATION OF CAUSE AND EFFECT—FINAL CAUSES.

With regard to intelligent beings, actions are the effects of motives or feelings. Hence the motive or design of an action is called its final cause. Moral causes refer to habits, events, and institutions. Final causes refer generally to individual acts.

1. The following are examples:—

"And in very deed for this cause have I raised thee up, for to show in thee my power; and that my name may be declared throughout all the earth."—*Exod.* ix. 16.

"Dearly beloved brethren, the Scripture moveth us in sundry places to acknowledge and confess our manifold sins and wickedness; and that we should not dissemble nor cloke them before the face of Almighty God our heavenly Father; but confess them with an humble, lowly, penitent, and obedient heart; *to the end* that we may obtain forgiveness of the same by his infinite goodness and mercy."—*Prayer-Book.*

"The gentleman travels *for pleasure.* The lady rides *for exercise.* The merchant toils *for wealth.* The soldier fights *for glory.*"

"Smith has shown that labour is the real source of wealth: that the wish to augment our fortune and to rise in the world—a wish that comes with us from the womb and never leaves us till we go into the grave—is the cause of wealth being saved and accumulated."—*Macculloch.*

"It is the interest of every master that the persons in his employment should be contented with their position, and feel a pride in every thing which contributes to the success of the establishment of which they form a part. The mere labourer for hire, who has no interest in his work beyond the performance of a contract, for which he is to obtain a certain amount of wages, will not be the same zealous workman as the man who brings to his work a feeling of anxiety to perform it in a manner which will redound the most to the credit of the master who employs him."—*The Responsibilities of Employers. (Pickering.)*

The mode of reasoning in this case is from the existence of the cause to infer the existence of the effect, or

from the existence of the effect to infer the existence of the cause.

2. The doctrine of final causes enters largely into the science of Natural Theology.

From the adaptation of certain arrangements to answer certain purposes, we infer that these arrangements were *designed* to answer these purposes. Thus, the eye is adapted for seeing: we infer it was made to answer that purpose. And so we argue respecting hearing, and of all the other animal functions. You may see a large enumeration of similar instances in Paley's Natural Theology, and in the Bridgewater Treatises.

From the manifold proofs of design in the world, we infer the existence of a Designer. These effects denote intelligence, and hence we infer the existence of an Intelligent Cause.

"He that planted the ear, shall he not hear? he that formed the eye, shall he not see? He that chastiseth the heathen, shall not he correct? he that teacheth man knowledge, shall not he know?"—*Psalm* xciv. 9, 40.

"But to proceed to show that in all science there was evidence of a God. Take a font of types, and scatter them over the floor of Exeter-hall; would they arrange themselves into the shape and order of Milton's 'Paradise Lost,' or one of Shakspeare's plays? Certainly not; but if, on the other hand, they found them arranged in the composing-stick in the shape and order of either the one or the other, would not the natural inference be, that it had been done by some person who had first designed the work, and then carried that design into execution? Or if a man who had never seen a watch, found one in the desert, and on opening it discovered its wheels and cranks all working together, and some of them apparently in opposition to each other, yet all combining to show the hour of the day—would he not infer that some ingenious and contriving person had been at work arranging all this delicate and complicated machinery for a definite result? Again, if you took all the bricks of which London was composed and heaped them together, they would be bricks, but nothing more; but when they were arranged and built up into buildings like that hall, into houses, streets, and squares, then there was evidence of design and aim. So with the universe; from the largest star that shone in the firmament to the minutest insect that floated in the sunbeam—in every thing—the evidences of design were so various, so clear, so magnificent, so grand, that

that man who would still say, 'There is no Author here, all is chance,' must be blind or mad—as the Psalmist said, it was 'the fool who said in his heart there is no God.' * * * * In the human eye, which, while lighting us on our way, was made capable of receiving the most pleasurable impressions from external objects —the ear, which, while performing its duty of warning us of danger, was made also the storehouse of the most exquisite sounds—the taste, which, while pressing us to eat, gave us satisfaction and delight in eating—the muscles of the body, which, while designed with the greatest strength, combined with that strength the greatest lightness and the utmost symmetry and elegance of form—all this the Atheist would tell you was the result of mere accident; but the Christian said: 'All this proves the design of a wise, a beneficent, and an omnipotent God.' So with every thing in animal life, the wing of the bird, the cell of the bee, the adaptation of every thing to its use and purpose, all was indicative of the same great design. * * * * Take another fact from science. During the months of June, July, and August, the rise in the temperature of the day was so great, that if the heat continued to increase from nine to twelve in the morning, at the same rate as it increased from six to nine, every green thing would be scorched, and the atmosphere would be unbearable. How was this heat modified? Water, in process of conversion into steam, absorbed heat, and in summer, as the sun rose higher in the heavens, the heat of its rays converted the dew-drops on the flowers and the little pools of water on the ground into steam, and the heat was carried off by it. Again, when the sun went down, excessive cold was prevented by another arrangement. Those mists which the sun had taken up in the morning to keep the day cool, were again condensed at night into dew, and water going back from the state of steam to water gave out heat, and thus the night was made warm. And in winter, the rapid increase of cold was prevented by the frosts, which, by converting water into ice, compelled it to pass off its superabundant caloric into the atmosphere, which was thus warmed by it." —*Dr. Cumming's Sermon on God in Science.*

3. From the manifestation of certain attributes or qualities in the works of Creation and Providence, we infer the existence of these attributes and qualities in the Intelligent Cause. Hence we demonstrate the power, wisdom, goodness, and other attributes of God. Thus we prove the goodness of God by facts showing that the works of nature are so constructed as to produce pleasure as well as utility to his intellectual creatures.

"Nevertheless he left not himself without witness, in that he did good, and gave us rain from heaven, and fruitful seasons, filling our hearts with food and gladness."—*Acts* xiv. 17.

"But why was man so constituted, as to require food? Is not the obvious answer to be found in that Divine benevolence by which enjoyment is spread so largely over all life? There can be no question of the resources of Omnipotence; man might have been formed with no more necessity for food than the flower. But all know that food is capable of giving pleasure, and by this daily necessity a general pleasure was constantly combined with existence."

"He who made the organs of nutrition might have adapted them to any food, or any food to them. Or he might have made but *one* species of food, or made that one repulsive, and yet nutritious. Yet, what is the reality? He has given us food in astonishing variety, generally under forms of great beauty, and universally pleasing to the taste. But he has not merely diversified the necessary subsistence of man, and thus met the diversified climates of the globe; but he has given luxuries, unessential to the actual support of man: the syrups of the East, the spices of the South, the rich fruitage of the West, the refreshing products of Southern Europe; the lemon, the orange, the melon, and the vine, salutary luxuries in their own climates, delicious luxuries in all.

"But now to take the world of vegetation in another aspect, and perhaps the most distinctly evidential of the Divine goodwill to man,—the BEAUTY of the vegetable kingdom."

"The progress of the fruit-tree is almost a *succession* of beauty; from the springing foliage, the bud, the blossom, the formed fruit, to the ripened colouring. In all the loveliness of nature I know nothing lovelier than the orchard of our own country, under the varying lights of leaves and colour, of spring, summer, and autumn."

"But another enjoyment still remains for man,—in the FRAGRANCE of the vegetable world. Vegetation is almost the only source of fragrance, and yet how copious, how constant, and how exquisite is its enjoyment! Who has not owned the delight of *the morning air*, as it comes freshened from the field? Who has not felt the cool *odours of the forest*, as he walks under its shade, while the sun is blazing abroad? Or, when the day goes down, who has not enjoyed the sudden *sweetness of the flowers* beginning to breathe under the dew? or, at night-fall, has not scented the *new-mown hay*, and felt all this as a pleasure distinct from all others; or which even more than pleases, awakening a finer sensibility than of sight, and seeming to soothe, and perhaps even to purify, the mind?

"But there is still an immense region of the vegetable kingdom which yet more strongly marks the *Divine design of human happiness.*—The whole boundless race of flowers; whose chief conceivable purpose is for the enjoyment of the human sense. Such subjects as those are familiar, but not trifling. Our Lord himself did not disdain to recall our thoughts to those works of his Almighty Father: 'Behold the lilies of the field,—Solomon, in all his glory, was not arrayed like one of these.'"—*Dr. Croly's Sermons.*

4. The doctrine of final causes also enters largely into our reasonings on the nature and character of the human mind, and on the circumstances by which we are surrounded.

From the properties, or qualities, or faculties of the mind, we infer the existence of a corresponding design. Man has a capacity for being happy—we infer he was designed to be happy. Man has a capacity for acquiring knowledge—we infer he was designed to acquire knowledge. Man has feelings and capacities adapted for society—we infer he was designed to live in society. Man has faculties and capacities adapted for an immortal state of existence—we infer he is destined to be immortal.

"The creator has put forth in his gifts a magnificence which should impress our hearts. What variety in those affectionate sentiments, of the delights of which our natures are susceptible! Without going out of the family circle, I enumerate filial piety, fraternal affection, friendship, love, and parental tenderness. These different sentiments can all exist equally in our hearts, and so far from weakening, each tends to give vigour and intensity to the other."

"The destiny of all the inferior orders that surround us, appears to terminate upon the earth. Ours alone is evidently not accomplished here. The animals, exempt from vice, incapable of virtue, experience, in ceasing to live, neither hopes nor regrets. They die without the foresight of death. Man, in the course of an agitated life, degrades himself by follies and vices, or honours himself by generous and useful actions. Remembrances, loves, ties, in countless forms, twine about his heart. He is torn, in agony, from beings for whom he has commenced an affection that he feels might be eternal. Persecuted for his virtue, proscribed for his wisdom and courage, calumniated for his most conscientious acts, he turns to heaven a fixed look of confidence and hope. Has he nothing to perform beyond death? Has the Author of nature forgotten his justice, only in completing his most perfect work?

"Our immortality is a necessary consequence of the existence of God. Let us not wander astray in vain discussions, which, with our present faculties, we can never master, such as relate to the nature of the soul. It is enough for me that there is a God. Virtue in misfortune must have hopes which do not terminate in the tomb."—*The Art of being Happy.*

"INFLUENCE OF CUSTOM.—It will not be difficult to find out several important final causes. That the power of custom is a happy contrivance for our good, cannot have escaped any one who reflects that business is our province, and pleasure our relaxation only. Now, satiety is necessary to check exquisite pleasures, which otherwise would engross the mind, and unqualify us for business. On the other hand, as business is sometimes painful, and is never pleasant beyond moderation, the habitual increase of moderate pleasure, and the conversion of pain into pleasure, are admirably contrived for disappointing the malice of fortune, and for reconciling us to whatever course of life may be our lot.

"Another final cause will be highly relished by every person of humanity, and yet has in a great measure been overlooked, which is, that custom hath a greater influence than any other known cause, to put the rich and the poor upon a level. Weak pleasures, the share of the latter, become fortunately stronger by custom, while voluptuous pleasures, the share of the former, are continually losing ground by satiety. Men of fortune, who possess palaces, sumptuous gardens, rich fields, enjoy them less than passengers do. The goods of fortune are not unequally distributed. The opulent possess what others enjoy."—*Encyclopædia Britannica.*

5. In the same way, from the attributes, qualities, and capacities of the animal creation, we infer the design or final cause of their creation.

"All the wonderful instincts of animals, which, in my humble opinion, are proved beyond a doubt, and the belief in which has not decreased with the increase of science and investigation,—all these instincts are given them only for the combination or preservation of their species. If they had not these instincts, they would be swept off the earth in an instant. This bee, that understands architecture so well, is as stupid as a pebble-stone, out of his own particular business of making honey; and, with all his talents, he only exists that boys may eat his labours, and poets sing about them. *Ut pueris placeas et declamatio fias.* A peasant girl of ten years old puts the whole republic to death with a little smoke; their palaces are turned into candles, and every clergyman's wife makes mead-wine of the honey; and there is an

end of the glory and wisdom of the bees! Whereas, man has talents that have no sort of reference to his existence; and without which, his species might remain upon earth in the same safety as if they had them not. The bee works at that particular angle which saves most time and labour; and the boasted edifice he is constructing is only for his egg: but Somerset House, and Blenheim, and the Louvre, have nothing to do with breeding. Epic poems, and Apollo Belvideres, and Venus de Medicis, have nothing to do with living and eating. We might have discovered pig-nuts without the Royal Society, and gathered acorns without reasoning about curves of the ninth order. The immense superfluity of talent given to man, which has no bearing upon animal life, which has nothing to do with the mere preservation of existence, is one very distinguishing circumstance in this comparison. There is no other animal but man to whom mind appears to be given for any *other* purpose than the preservation of body."—*Sydney Smith's Sketches of Moral Philosophy.*

The following argument, from the relation of final cause and effect, has been advanced in favour of sporting:—

"As Nature, with a liberal but not lavish hand, has bestowed on her offspring those powers and propensities only, which their own necessities, or the general order and economy of the system require; the gifts of scent to the hound, swiftness to the greyhound, and sagacity to the pointer, denote the use which she intended man to make of these animals; and, therefore, the diversions in question are justifiable, as fulfilling the intentions of Nature herself."—*Questions in Political Economy.*

6. It is a principle of moral philosophers, that the final cause or motive of an action forms the moral character of the action.

"That the moral quality of the action resides in the intention, is evident from various considerations.

"By reference to the intention, we inculpate or exculpate others, or ourselves, without any respect to the happiness or misery actually produced. Let the result of an action be what it may, we hold a man guilty simply on the ground of intention, or, on the same ground, we hold him innocent. Thus, also, of ourselves. We are conscious of guilt or of innocence, not from the result of an action, but from the intention by which we were actuated.

"We always distinguish between being the instrument

of good, and intending it. We are grateful to one who is the cause of good, not in the proportion of the amount effected, but of the amount intended."

"As the right and wrong of an action reside in the intention, it is evident, that, where an action is intended, though it be not actually performed, that intention is worthy of praise or blame, as truly as the action itself, provided the action itself be wholly out of our power. Thus God rewarded David for intending to build the temple, though he did not permit him actually to build it. So, he who intends to murder another, though he may fail to execute his purpose, is, in the sight of God, a murderer. The meditation upon wickedness with pleasure, comes under the same condemnation.

"As the right or wrong exists in the intention, wherever a particular intention is essential to virtuous action, the performance of the external act, without that intention, is destitute of the element of virtue. Thus, a child is bound to obey his parents, with the intention of thus manifesting his love and gratitude. If he do it from fear, or from hope of gain, the act is destitute of the virtue of filial obedience, and becomes merely the result of passion or self-interest. And thus our Saviour charges upon the Jews the want of the proper *intention*, in all their dealings with God. 'I know you,' said he, 'that ye have not the *love of God* in you.'"—*Wayland's Elements of Moral Science.*

7. Under this head of final cause and effect, we may class those reasonings that are designed to prove the object or design of the laws of ancient nations. Montesquieu's "Spirit of Laws," and Michaelis's "Commentaries on the Laws of Moses," are full of reasonings of this description. In cases when a legislator has not himself stated the object of his laws, their design can be gathered only from a consideration of the nature of the enactments in connexion with the character of the people among whom they were promulgated. In his pamphlet on "Marriage with the Sister of a Deceased Wife," Dr. Croly has made some striking remarks on "The Mosaic Code." We can make room for only a few quotations:—

"The spirit of the Mosaic Code, with respect to the Divine

Being, was the most sacred reverence; with respect to the order of national worship, was the strictest solemnity; but, with respect to the national customs, was large allowance for the original habits of the people. In this last point, it was neither a *new* rule of society, nor a republication of the old. It was a rule of *gradual* purity; of progressive reform, and of the sufferance of existing evil, to elicit ultimate good. Yet, if it thus bore less the stern stamp of an irresistible lawgiver, than of a great teacher, shaping his instruction to the faculties of the people; even this flexibility only the more closely established its connexion with the general government of Providence.

"The first years of the Jewish people had been spent in contact with Syrian and Arabian life. 'A Syrian ready to perish, was thy father.' From this school of the harshest and most prejudiced habits of the East, they were given into the hands of the Egyptian, the most subtle, artificial, and superstitious nation of the ancient world. The Jews, in the course of four centuries, naturally acquired the habits of both. But, when about to be formed into a *new* nation in Palestine, the first step of their Moral Code was, to purify the national spirit; to extinguish all the evil, that could be extinguished; and to qualify all that was beyond extinction.

"This object solves the whole difficulty of the Moral Law. All the ordinances exclusively Egyptian, and to which the national attachment might have been naturally weakened by the memories of the 'House of Bondage,' were swept away at once. But, the Syrian customs, which brought back the memories of their ancestors, of their original independence, and which probably could not be extinguished, but by the popular extermination, were suffered to remain; yet, in every instance, accompanied by conditions, which at once relieved the severity of their operation, and gave the promise of their final decay.

"On this subject, which has certainly never received due attention, I must here limit myself to a few remaks.

"The law of Blood-revenge appears to have been universal in Western Asia and Arabia. By this law, the man who killed another, even by accident, was to be slain by the next kinsman.—The Mosaic Code, without insisting on the abandonment of the custom, provided six cities, three on each side of the river Jordan, to which the homicide might flee, and where he was secure, until formal trial. Thus, the principle was *modified*.

"By an ancient oriental custom, the creditor was entitled to sell the debtor.—The Mosaic Code, without disputing the right, ordered that the bondage of the debtor, if an Israelite, should not continue beyond the Sabbatical year, except by his own choice; and that no Israelite bondsman should be sold into a foreign country. Thus the principle was *modified*."

"Polygamy was an established right throughout the East.—The Mosaic Code interfered, simply to forbid one of its frequent acts of injustice. It ordered, that the inheritance of the earlier wife's offspring should be secured against the favouritism of the second, or her offspring. The principle was *modified.*"

"Slavery was retained.—But a provision against its excess in numbers was enacted, by the Mosaic prohibitions of man-stealing, still so common among the nations of the South; and of that cruelty which so generally marks the trade in man. The master who killed his slave by an act of passion, must be put to death. Even the lower degrees of injury were punished; the loss of an eye, or of a tooth, by the master's violence, entitled the slave, male or female, to freedom. The principle was *modified.*

"Divorce was probably common in the earlier ages of Syria and Arabia, for it was always regarded as an essential privilege; and, in the more civilized times of Palestine, was still considered to be of so much importance, that even the disciples of our Lord pronounced its extinction a sufficient ground for declining marriage altogether.—In the Mosaic Code, formalities and delays were enjoined in practice, which must have greatly restricted the custom, and which, at least, softened the painful abruptness, of Divorce. A period of three months must pass before the separation could be valid; during which time the husband and wife were to be allowed the opportunity of reconciliation. The principle was *modified.*

"In all Heathenism, and, of course, in Syria and Arabia, the father had the power of death over a rebellious child. Of a right so firmly established, it might have been impossible to prevent the exercise.—The Mosaic Code reduced the practice into an appeal to the public tribunals; thus rescuing the son from the immediate fury of the father, and giving his case over to impartial judgment. The principle was *modified.*"—*Marriage with the Sister of a Deceased Wife.*

8. The doctrine of final causes enters largely into the administration of the law. Sometimes this mode of reasoning is employed by the lawyers in fixing the meaning of an Act of Parliament. Our laws are made by the legislature, but their meaning is fixed by the judges. It sometimes happens that the wording is uncertain or obscure, and that one clause appears to contradict some other clause. In these cases the judges inquire into the intention of the act; that is, the intention of the legislature in passing the act. This intention is sometimes called the spirit of the act, and when a clause has two meanings, the judges will

decide in favour of that meaning which is most in conformity with the spirit of the act. Take for example the Reform Act passed in 1831. The intention of the act was to extend the privilege of voting for members of Parliament. In case, therefore, the meaning of any of the clauses should be doubtful, that meaning which is most favourable to the extension of the privilege of voting for members of Parliament is most in conformity with the spirit of the act. If you watch the proceedings of the Courts of Law, you will observe many cases illustrative of this kind of reasoning. Thus, in the action now pending respecting the powers of American authors to hold or sell English copyrights, one argument rests upon the design or intention of the act. "The object of the legislature," it is said, "is clearly not to encourage the importation of foreign books, and their first publication in England, as a benefit to this country, but to promote the cultivation of the intellect of its own subjects; and, as the Act of Anne expressly states, to '*encourage learned men to compose and write useful books*,' by giving them, as a reward, the monopoly of their works for a certain period, dating from their first publication. We therefore hold that a foreigner, by sending to, and first publishing his works in Great Britain, acquires no copyright. A British subject who purchases from him such a right as he had in his own country, which could not extend beyond it, cannot be in a better condition here than the foreigner."

9. In judicial cases also, this principle of final causes is acknowledged. From the effects of any motive, the law infers the existence of the motive.

If a man commits murder, the law assumes that he intended to commit murder. So, if a dozen persons, who never saw each other before, should join in an illegal act, they may be indicted for a conspiracy; for their acting in concert will be considered as a proof of an intention to act in concert. In the case of Dr. Webster, who was hanged at Boston last year for the murder of Dr. Parkman, the following observations appeared in the *Literary World*, a paper published at New York :—

"Suppose the facts as stated in the confession had been proved by a witness present on the spot, but without the knowledge of

the accused; and then apply the law as laid down by the Chief Justice, and which we see no reason to question.

"'In murder, to escape the imputation of malice, the prisoner must prove the provocation, the accident, or any other circumstance which goes to preclude the malice; otherwise it is argued from the act itself. No provocation of words, however opprobrious, will mitigate the motive for a mortal blow, or one intended to produce death, where there is an intent to kill. If there is sufficient provocation, it is manslaughter; but words are not a sufficient provocation. Malice is implied from any deliberate, cruel act against another, however sudden. When there is a blow of a deadly weapon, with intent to do some great bodily harm, and death ensues, malice is presumed.'

"Amongst the interstices of this net-work of distinctions, there may possibly be room to extricate the killing of Dr. Parkman from the category of murder; but we confess the distinctions of the law seem framed to meet this very description of sudden, unjustifiable, passionate, revengeful, and reckless homicide. Were the contrary the case, few of the usual forms of murder would come within the definition. This confession of Dr. Webster may be only another link in the chain of fatalities which he has been forging for his own destruction."

10. Final causes form an important part of the investigation in cases of circumstantial evidence. If we show that the prisoner had a strong motive for committing the offence, such as avarice, revenge, &c., or had stated beforehand a determination that he would commit it, this, with other circumstances, will be considered as tending to prove that he did commit it.

"Motives are with relation to moral conduct," says Mr. Wills, "what physical power is to mechanics; and both of these kinds of impulse are equally under the influence of known laws. But in reasoning upon motives and their resulting actions, it is impracticable to obtain the same sure data as when material phænomena only are involved, since it is not possible to discover all the modifying circumstances of human conduct, or to assign with unerring certainty the true character of the motives from which they spring. Nevertheless, we naturally, reasonably, and safely, judge of men's motives by their conduct, as we conclude from the nature of the stream the qualities of the fountain whence it proceeds.

"An evil motive constitutes in law, as in morals, the essence of guilt; and the existence of an inducing motive for the voluntary acts of a rational agent, is assumed as naturally as secondary causes are concluded to exist for material phænomena. The pre-

dominant desires of the mind are invariably followed by corresponding volitions and actions. It is therefore indispensable, in the investigation of moral actions, to look at all the surrounding circumstances which connect the supposed actor with other persons and things, and may have influenced his motives.

"The usual inducements to crime, are the desire of revenging real or fancied wrongs,—of obtaining some object of desire which rightfully belongs to another,—or of preserving reputation, either that of general character or the conventional reputation of sex or profession."—*Wills's Circumstantial Evidence.*

"In many things which we do, we ought not only to consider the mere naked action itself, but the persons who act, the persons towards whom, the time when, the place where, the manner how, *the end for which the action is done,* together with the effects that must, or that may follow, and all other surrounding circumstances: these things must necessarily be taken into our view, in order to determine whether the action, which is indifferent in itself, be either lawful or unlawful, good or evil, wise or foolish, decent or indecent, proper or improper, as it is so circumstantiated.

"Let me give a plain instance for the illustration of this matter. —Mario kills a dog, which, considered merely in itself, seems to be an indifferent action: now the dog was Timon's, and not his own; this makes it look unlawful. But Timon bid him do it; this gives it an appearance of lawfulness again. It was done at church, and in time of divine service; these circumstances added, cast on it an air of irreligion. But the dog flew at Mario, and put him in danger of his life; this relieves the seeming impiety of the action. Yet Mario might have escaped by flying thence; therefore the action appears to be improper. But the dog was known to be mad; this further circumstance makes it almost necessary that the dog should be slain, lest he might worry the assembly, and do much mischief. Yet again, Mario killed him with a pistol, which he happened to have in his pocket since yesterday's journey; now, hereby the whole congregation was terrified and discomposed, and divine service was broken off; this carries an appearance of great indecency and impropriety in it: but after all, when we consider a further circumstance, that Mario, being thus violently assaulted by a mad dog, had no way of escape, and had no other weapon about him, it seems to take away all the colours of impropriety, indecency, or unlawfulness, and to allow that the preservation of one or many lives will justify the act as wise and good. Now, all these concurrent appendices of the action ought to be surveyed, in order to pronounce with justice and truth concerning it."—*Watts's Improvement of the Mind.*

11. Under the head of final causes we may place those reasonings that are founded on the presumed object of the measures we advocate. Thus, in regard to the punishment of criminals, one party contends that the main object is the punishment of the criminal; another contends that the main object is the reformation of the criminal; and a third contends that the main object of punishment is the prevention of crime. The opinion any one may entertain as to the final cause or main object of punishment, will, of course, influence his sentiments as to the nature, duration, and severity of the punishments that ought to be inflicted.

"The proper end of punishment is said by some to be the satisfaction of justice; by others the prevention of crimes; by others the reformation of the offender. The first doctrine is that which most immediately occurs to a mind beginning to reflect on the subject; and it is often warmly defended, although it is now pretty nearly abandoned by systematic writers on legislation. One of the last instances of a laboured defence of it, which we have met with, is to be found in a dissertation by Lord Woodhouslee, appended to his Life of Lord Kames. The second opinion is supported by the generality of writers, although they by no means reject the third object, as a subordinate consideration. Of late years, a few philanthropists have argued, that the principal object of punishment should be the reformation of the offender, and that other ends are of inferior consequence."

"If crimes could be more effectually prevented by any one punishment than another, the tendency of that punishment to satisfy the demand for justice, or to reform the offender, would be a secondary consideration. If the crime of murder, for example, could be more effectually prevented by the penalty of death than by a term of imprisonment, which would give an opportunity for the reformation of the criminal, that penalty ought to be inflicted, and the reformation of the offender abandoned, otherwise we should be showing more regard for the life of a murderer than for the lives of innocent persons."—*Questions in Political Economy.*

12. Political economists sometimes argue upon this principle. They assign motives to different classes of society, and then infer that persons under the influence of such motives would act in a certain manner; and on the conduct thus assumed, they construct a theory. Thus, Mr. Macculloch states that "the wish to augment our fortunes comes with

us from the womb, and never leaves us till we go into the grave."

This may be the case generally in Scotland, but it is not so in Ireland, and it is not so universally anywhere. In all classes of society, many individuals are found who prefer present enjoyment to a future improvement of their condition. Another erroneous assumption is, that the uninstructed classes of society, when left to themselves, will always do that which is most conducive to their own advantage. This argument has been advanced in opposition to those acts of the legislature that refer to regulating the hours of labour in the manufactories, and to the working of women and children in mines. The reasonings of some parties, who style themselves *economists*, with reference to these matters, will, on examination, be found to rest on erroneous assumptions.

In tracing the progress of society, too, the economists assume that mankind were originally savages, then became hunters, then shepherds, then agriculturists, and at last merchants and manufacturers; and they attribute to mankind in these several stages precisely the same feelings and motives which men entertain in the highest degree of civilization. Some political economists have written very fallaciously on this subject. But, in the first place, there is no foundation for the theory that the savage life was the original state of man; and, in the next place, man in a savage state does not possess within himself that thirst for knowledge and desire for improvement which is exhibited by man in a state of civilization.

"But the opinion that all mankind were originally savages, is unsupported by either reason or history. Had they been created savages, they would probably have remained savages for ever. They could have formed no idea of a civilization which had never existed, nor have desired comforts, the want of which they did not feel. History does not record a single instance of a savage nation having become civilized by its own unassisted exertions. Civilization has never sprung up spontaneously from the soil; it has always been imported from abroad. The Greeks derived their civilization from the Egyptians; the Romans theirs from the Greeks; the nations conquered by Rome became civilized from their intercourse with the Romans. But if we attempt to trace the origin of civilization in Egypt and Babylon, we are at a loss;

for neither history, nor even tradition, mentions any period at which these nations were not civilized. Founded soon after the flood, they possessed the knowledge of all the arts and sciences known to the antediluvian world. The fertility of their soils, and the extent of their plains, furnished ample provision for their population: hence, as population increased, their civilization increased. While, on the other hand, those tribes or families who wandered in quest of new settlements became separated from the rest of mankind by mountains, and forests, and rivers; and their time being wholly occupied in seeking supplies of food, they lost, in the course of a few generations, the knowledge they originally possessed, and fell into the savage state. It would thus appear, from history and from reason, that the savage state was not the original state of man, but a departure from that state, arising from a want of communication through several ages with the other branches of the family of mankind."—*Lecture on the Philosophy of Language.*

13. As all actions result from the feelings of the mind, when we wish to induce any person to perform certain actions, we try to produce in the mind those convictions and feelings which are the usual cause of such actions. It is the great object of logic to teach us how to select and use those arguments that have an effect upon the judgment and understanding. But sometimes people are influenced more by their feelings than by their judgment. In this case, if we wish to convince or persuade them, we must adapt our arguments to their feelings. The parties who are thus influenced by their passions can hardly be said to reason; but we who are trying to influence them may be reasoning, nevertheless: We are using a means to accomplish an end; we are selecting such arguments, and placing them in such a form, as are best adapted to produce an impression on the mind of the individual with whom we converse. These arguments, according to Dr. Watts, are the following:—

"There is yet another rank of arguments which have Latin names; their true distinction is derived from the topics or middle terms which are used in them, though they are called an address to our *judgment*, our *faith*, our *ignorance*, our *profession*, our *modesty*, and our *passions*.

"1. If an argument be taken from the nature or existence of things, and addressed to the *reason* of mankind, it is called *argumentum ad judicium*.

"2. When it is borrowed from some convincing testimony, it is *argumentum ad fidem*, an address to our *faith*.

"3. When it is drawn from any insufficient medium whatsoever, and yet the opposer has not skill to refute or answer it, this is *argumentum ad ignorantiam*, an address to our *ignorance*.

"4. When it is built upon the professed principles or opinions of the person with whom we argue, whether the opinions be true or false, it is named *argumentum ad hominem*, an address to our *professed principles*. St. Paul often uses this argument when he reasons with the Jews, and when he says, 'I speak as a man.'

"5. When the argument is fetched from the sentiments of some wise, great, or good men, whose authority we reverence and hardly dare oppose, it is called *argumentum ad verecundiam*, an address to our *modesty*.

"6. I add finally, When an argument is borrowed from any topics which are suited to engage the inclinations and passions of the hearers on the side of the speaker, rather than to convince the judgment, this is *argumentum ad passiones*, an address to the *passions*; or, if it be made publicly, it is called *ad populum*, or an appeal *to the people*."

You see, the Doctor has given us the Latin as well as the English names for these arguments. You had better forget the Latin: don't introduce scraps of Latin into your reasonings when you can equally well express your meaning in English.

The fourth kind of argument in the above list requires a further illustration, and this we have in the Doctor's "Improvement of the Mind:"—

"Sometimes we may make use of the very prejudices under which a person labours, in order to convince him of some particular truth, and argue with him upon his own professed principles as though they were true. This is called *argumentum ad hominem*, and is another way of dealing with the prejudices of men.

"Suppose a Jew lies sick of a fever, and is forbidden flesh by his physician; but hearing that rabbits were provided for the dinner of the family, desired earnestly to eat of them; and suppose he became impatient because his physician did not permit him, and he insisted upon it, that it could do him no hurt; surely, rather than let him persist in that fancy and that desire, to the danger of his life, I would tell him that these animals were strangled, which sort of food was forbidden by the Jewish law, though I myself may believe that law is now abolished.

"In the same manner was Tenerilla persuaded to let Damon her husband prosecute a thief, who broke open their house on a

Sunday. At first she abhorred the thoughts of it, and refused it utterly, because, if the thief were condemned, according to the English law, he must be hanged; whereas (said she) the law of God, in the writings of Moses, does not appoint death to be the punishment of such criminals, but tells us that a thief shall be sold for his theft, Exod. xxii. 3. But when Damon could no otherwise convince her that the thief ought to be prosecuted, he put her in mind that the theft was committed on a Sunday morning: now the same law of Moses requires that the Sabbath-breaker shall surely be put to death: Exod. xxxi. 15; Numb. xv. 35. This argument prevailed with Tenerilla, and she consented to the prosecution.

"Encrates used the same means of conviction when he saw a Mahometan drink wine to excess, and heard him maintain the lawfulness and pleasure of drunkenness: Encrates reminded him that his own prophet Mahomet had utterly forbidden all wine to his followers: and the good man restrained his vicious appetite by his superstition, when he could no otherwise convince him that drunkenness was unlawful, nor withhold him from excess!"

14. The effects of circumstances upon the disposition of the mind may fairly be placed under this head, and they enter largely into our daily reasonings. On this ground Lord Erskine advocated his bill for preventing cruelty to animals.

"In what I am proposing to your lordships, disinterested virtue, as in all other cases, will have its own certain reward. The humanity you shall extend to the lower creation, will come abundantly round in its consequences to the whole human race. *The moral sense, which this law will awaken and inculcate, cannot but have a most powerful effect upon our feelings and sympathies for one another.* The violences and outrages committed by the lower orders of the people, are offences more owing to want of thought and reflection than to any malignant principle; and whatever, therefore, sets them a-thinking upon the duties of humanity, more especially where they have no rivalries nor resentments, and where there is a peculiar generosity in forbearance and compassion, has an evident tendency to soften their natures, and to moderate their passions in their dealings with one another. The effect of laws, which promulgate a sound moral principle, is incalculable; I have traced it in a thousand instances, and it is impossible to describe its value."

In conformity with this principle, if a man has received a good education, we expect to find him well-informed; if he has mixed in polite society, we presume his manners

are courteous; if he has held certain positions in society, we infer that he has the excellencies, and probably the defects, connected with that position; and if we are wise, we shall consider the peculiar temptations to which our own circumstances expose us, and endeavour to guard our minds against them.

"Different employments, and different conditions of life, beget in us a tendency to our different passions. Those who are exalted above others in their daily stations, and especially if they have to do with many persons under them, and in many affairs, are too often tempted to the haughty, the morose, the surly, and the more unfriendly ruffles and disturbances of nature, unless they watch against them with daily care. The commanders in armies and navies, the governors of workhouses, the masters of public schools, or those who have a great number of servants under them, and a multitude of cares and concerns in human life, should continually set a guard upon themselves, lest they get a habit of affected superiority, pride, and vanity of mind, of fretfulness, impatience, and criminal anger."—*Anon.*

Upon this ground, we avoid dangerous society, knowing that evil communications corrupt good manners.

"And here I would advise you to have no dealings with a man who is known to be a rogue, even though he should offer a bargain that may, in that instance, be for your advantage to accept. To avoid him is your duty, on the ground of morality; but it is, moreover, your interest in a pecuniary point of view: for, depend upon it, although he may let you get money by him at first, he will contrive to cheat you in the end. An additional reason is, that your own reputation, and even your moral sensibilities, may be endangered by the contact. If you get money by a rogue, there is a danger that you will feel disposed to apologize for his roguerics; and, when you have once become an apologist for roguery, you will probably, on the first temptation, become a rogue yourself."—*Lectures on Ancient Commerce.*

15. The doctrine of final causes enters largely into our reasonings on the ordinary affairs of human life. We act upon this principle in judging of other people. As actions are the effect of motives and feelings, we infer from the character of the actions the character of the motives or feelings. "A good tree bringeth forth good fruit, and an evil tree bringeth forth evil fruit; for a tree is known by its fruits."

In cases where the same action may arise from different motives, we endeavour to ascertain to which motive the action should be ascribed. Our usual mode of reasoning in this case is from circumstantial evidence: from the existence of the sign, we infer the existence of the condition.

There are certain social relations which are usually attended with certain feelings; and hence we expect in such relations to find such feelings, and that the actions will correspond with such feelings. Where there is no such correspondence, we infer that the parties have been unfaithful to their duty. Hence, an unrighteous judge, a cruel husband, an unkind father, an undutiful son, are characters which mankind in all ages have unanimously denounced.

And, finally, we endeavour to act towards other people in such a way as we judge, from the ordinary principles of human nature, is likely to procure for us their good opinion. On the best means of effecting this object, we subjoin the observations of an American writer:—

"If we desire to be deemed religious, we have only to be religious, and we must be thus deemed. If you desire to be deemed veracious, speak the truth habitually, and you must be thus deemed. If you desire to be deemed trustworthy, patriotic, benevolent, just, hospitable, philanthropic, studious, learned, be what you desire to be deemed, and your reputation must conform to what you are. While the senses and intellect of men are so organized that men must, as we have seen, impute to us the qualities which we possess, the moral feelings of mankind are so organized that men must feel towards us according to the moral qualities which we possess. If we are lovely, we must be loved; if hateful, we must be hated; if contemptible, we must be contemned; if despicable, we must be despised."—*Lectures to Young Men on the art of controlling others, by A. B. Johnson, Utica, New York.*

PART III.

THE PRINCIPLES OF REASONING—*(continued.)*

WE have now gone through the second part of our book. In the first, you will recollect, we considered the Introduction to Reasoning. In the second part, we considered the Principles of Reasoning. In this part, we are going to consider still further the principles of reasoning. But these principles are of a different kind. In the former part the principles had a direct relation to the subject itself; we took the subject, and considered its attributes, its parts, its kinds, its causes, and its effects. In this part we shall consider the subject in its relation to other things. You may therefore, if you please, call the principles we have discussed, the *internal* principles of reasoning; and those we are going to discuss, the *external* principles of reasoning. These we shall consider in separate sections, under the following heads:—Section 1. Reasoning from Examples. 2. Reasoning from Analogy, Comparison, and Contrast. 3. Reasoning from Parables, Fables, and Proverbs. 4. Reasoning from Written Documents. 5. Errors in Reasoning.

SECTION I.

REASONING FROM EXAMPLES.

IN reasoning from examples we adduce examples in proof of the propositions we desire to establish.

1. The following are instances:—

"And it came to pass, that he went through the corn fields on the sabbath day; and his disciples began, as they went, to pluck the ears of corn. And the Pharisees said unto him, Behold, why do they on the sabbath day that which is not lawful? And he

said unto them, Have ye never read what David did, when he had need, and was an hungred, he, and they that were with him? How he went into the house of God in the days of Abiathar the high priest, and did eat the shewbread, which is not lawful to eat but for the priests, and gave also to them which were with him? And he said unto them, The sabbath was made for man, and not man for the sabbath: therefore the Son of man is Lord also of the sabbath."—*Mark* ii. 23—28.

"Descartes, whose habits were formed in solitude and meditation, was silent in mixed company. It was said that he had received his intellectual wealth from nature in solid bars, but not in current coin; or, as Addison expressed the same idea, by comparing himself to a banker, who possessed the wealth of his friends at home, though he carried none of it in his pocket."—*Disraeli's Curiosities of Literature.*

"It would be an extremely profitable thing to draw up a short and well-authenticated account of the habits of study of the most celebrated writers with whose style of literary industry we happen to be most acquainted. It would go very far to destroy the absurd and pernicious association of genius and idleness, by showing them that the greatest poets, orators, statesmen, and historians,—men of the most brilliant and imposing talents,—have actually laboured as hard as the makers of dictionaries and the arrangers of indexes; and that the most obvious *reason why they have been superior to other men is, that they have taken more pains than other men.* Gibbon was in his study every morning, winter and summer, at six o'clock; Mr. Burke was the most laborious and indefatigable of human beings; Leibnitz was never out of his library; Pascal killed himself by study; Cicero narrowly escaped death by the same cause; Milton was at his books with as much regularity as a merchant or an attorney,—he had mastered all the knowledge of his time; so had Homer. Raffaelle lived but thirty-seven years; and in that short space carried the art so far beyond what it had before reached, that he appears to stand alone as a model to his successors. There are instances to the contrary; but, *generally speaking, the life of all truly great men has been a life of intense and incessant labour.*"—*Rev. Sydney Smith's Moral Philosophy.*

"If then we consider the perpetual conflicts of savage tribes, the frequent wars of the rival republics of Greece with each other, and with their common enemies; if we remember that the temple of Janus at Rome, always open in the time of war, was never closed during five centuries, till the end of the second Punic war, and then only for a short time; if we advert to the desolation

caused by the Scythians, Goths, Vandals, Tartars, and the destruction of about two millions of human beings in the Crusades, it seems to be evident that wars were anciently, and before the general use of firearms and cannon, more frequent, protracted, destructive, and cruel than they are now."—*Aiken on War.*

"Yes, sir, if ever you was to Antwarp, you'd see what it is to lose colonies. When that place belonged to Holland, and had colonial trade, five thousand marchants used to meet on 'Change; now the Exchange is left, but the marchant is gone. Look at the great docks built there at so much expense, and no shipping there. Look at one man-of-war for a navy that has a pennant as long as from to-day to the middle of next week, that can't get out for the Dutch forts, is of no use in, and if it did get out has no place to go to. Buonaparte said he wanted ships, colonies, and commerce; Buonaparte was a fool, and did'nt know what he was a-talkin' about, for *colonies means all three.*"—*Sam Slick.*

"How on airth could we, if we were all like old Pugnose, as lazy, as ugly, make that cold thin soil of New England produce what it does? Why, sir, the land between Boston and Salem would starve a flock of geese; and yet look at Salem, it has more cash than would buy Nova Scotia from the king. We rise airly, live frugally, and work late: what we get we take care of. To all this we add enterprise and intelligence—a fellow that finds work too hard here, had better not go to the States."—*Ibid.*

2. This mode of reasoning from examples is called by scholastic logicians *induction*, and is opposed to *deduction*. The greater part of Mr. Mill's book on Logic is classed under the head of induction. Dr. Whewell, the Master of Trinity College, Cambridge, has published some observations on this part of Mr. Mill's work. Both these publications are interesting to learned men, who have a taste for this kind of discussion, but they will not afford to the general reader much practical instruction respecting the art of reasoning. I will endeavour to explain this matter in a way that you can understand.

We will, then, illustrate the difference between reasoning by *in*duction and reasoning by *de*duction. You have observed an individual come to poverty by a dishonest course of action, and another arrive at wealth by a life of rectitude; and you remark, "Honesty is the best policy." Here you reason by induction. From these individual cases you gather a proof of the general maxim, "Honesty

is the best policy." But suppose a person should ask your advice how to act in a case wherein strict integrity might appear to be less advantageous than a more crooked procedure, and you observe to him, "Honesty is the best policy;" here you reason by deduction. You apply the general principle to an individual case; you reason on the principle of genus and species. These two kinds of reasoning are just the reverse of each other. When from one or more examples you infer a general principle, that is called induction, or reasoning from examples. When from the general principle you infer an individual case, that is called deduction, or reasoning from genus and species. Induction is reasoning from particulars to generals, and deduction is reasoning from generals to particulars.

But you ask, How can I infer a general proposition from a small number of examples? Did you not tell me in the beginning of the book, that to infer "all men are liars," because a man has told me a lie, is contrary to sound logic? And is it not a rule, that "generals cannot be inferred from particulars?" Very true. This must be explained. You cannot infer generals from particulars, unless you have reason to believe that all the particulars are alike. Our reasoning here must depend upon the uniformity of the laws of nature. When the law is uniform, we can infer generals from particulars, because we know that all particulars are in fact generals. This is the case most frequently in the physical sciences. All animals of the same species are alike. I see that a horse has four legs: I may assert then that every horse in the world has four legs, though I have not seen them all. I decompose a glass of water, and find it is formed of oxygen and hydrogen: I therefore assert that all water, everywhere, is composed of oxygen and hydrogen. But when this constant uniformity does not exist, I cannot reason so conclusively; and my reasonings will be weaker and weaker in proportion to this want of uniformity; and hence we shall have to descend from certain reasonings, to probable reasonings, and then lower, to doubtful reasonings, until at last our examples may be so few or so conflicting, that we may have no foundation for any reasoning at all respecting the matter in dispute.

"Be not too hasty to erect general theories from a few peculiar observations, appearances, or experiments. This is what the logicians call a false induction. When general observations are drawn from so many particulars as to become certain and indubitable, these are jewels of knowledge, comprehending great treasure in a little room: but they are therefore to be made with the greater care and caution, lest errors become large and diffusive, if we should mistake in these general notions.

"A hasty determination of some universal principles, without a due survey of all the particular cases which may be included in them, is the way to lay a trap for our own understandings, in their pursuit of any subject, and we shall often be taken captives into mistake and falsehood. Nivio in his youth observed, that on three Christmas days together there fell a good quantity of snow, and now hath writ it down in his almanack, as a part of his wise remarks on the weather, that it will always snow at Christmas.—Euron, a young lad, took notice ten times, that there was a sharp frost when the wind was in the north-east; therefore in the middle of last July he almost expected it should freeze, because the weathercocks showed him a north-east wind; and he was still more disappointed, when he found it a very sultry season. It is the same hasty judgment that hath thrown scandal on a whole nation for the sake of some culpable characters belonging to several particular natives of that country; whereas all the Frenchmen are not gay and airy; all the Italians are not jealous and revengeful; nor are all the English overrun with the spleen."—*Watts on the Improvement of the Mind.*

Some writers make a distinction between reasoning from example and reasoning from induction,—the example is one, induction is more than one. But there seems no ground for this distinction. The mode of reasoning is the same; the only difference is in the degree of proof. The greater the number of examples, of course, the greater is the amount of evidence in proof of the general proposition.

In reasoning then from genus and species, we infer, you perceive, individual cases from universal rules. In reasoning from examples, we reverse our mode of reasoning; and from one or more examples we prove the general rule. We use the inductive method in regard to the physical sciences, such as astronomy, chemistry, &c. We see several instances in which fire melts lead; we infer it will always do so; and when we are satisfied that this is the case, we call it a law of nature. It was also by this

method that philosophers have discovered the laws of astronomy. By the same rule we discover the laws of medicine: if a medicine cures in a great number of cases, we infer that it will always cure in similar cases. In the science of morals, we also observe that certain vices lead to misery; and we infer that vice will always lead to misery, and virtue to happiness. In politics, we observe in the history of the world what institutions and what laws have conduced to the happiness of the people; we gather together these instances, and thus form maxims for the government of nations. In political economy we observe, or ought to observe, the same practice. But political economists have too often wandered into other paths. Instead of deducing their principles from facts, they have first formed their theories, and then made facts bend to their theories. Hence we have theories of population, theories of rent, theories of the currency, and theories of taxation, advanced and supported in a way more in accordance with the Aristotelian than with the Baconian system of philosophy.

3. The following explanation of the nature of induction is taken from Mr. Hill's Logic:—

"An induction in which every individual case is enumerated is a perfect demonstration. And in general, the more nearly we approach to the entire enumeration, the higher is the degree of probability attained by the induction: provided, at least, that no facts of an opposite tendency are discoverable; or that if they occur, they are satisfactorily shown not to be *really* inconsistent with the principle deduced. The great error in induction is too great haste in drawing a conclusion without having premised a sufficient number of individual cases. Many, for example, if they have met with or heard of *one or two dishonest lawyers*, or observed *a comet in a warm summer*, think themselves authorized to draw the sweeping inference, that *all lawyers are dishonest*, or *all comets occasion a warm season.*"

"A beautiful specimen of moral induction occurs 2 Peter ii. 4—9. The conclusion is twofold; and the sacred writer accordingly adduces a double train of individual instances, strikingly contrasted with each other. The substance of the arguments is this: *The offending angels,—the antediluvian world,—the inhabitants of Sodom and Gomorrah,—were divinely punished;* therefore, *all the unjust shall be divinely punished.* Again, *The holy angels who did not offend,—Noah, the preacher of righteousness,—and just*

Lot,—were delivered from trial; therefore *all the godly shall be delivered from trial.*

"The three introductory chapters of the Epistle to the Romans contain an inductive argument; in which the proposition, *All have sinned,* is inferred to be universally true, because it has been successively proved true, first concerning all Jews, and then concerning all Gentiles.

"Again, the general conclusion in Psalm xxxvii. 23, 24, as deduced from the train of observation mentioned in the subsequent verse;—and that in the 38th verse, as deduced from verses 35, 36, are specimens of moral induction."

"A correct and forcible instance of this mode of argument by analogy occurs in 1 Sam. xvii. 34—47. The *examples* also used by the Israelites in their lively remonstrance with the Reubenites, &c. (Josh. xxii. 17, 18, 20); by the Jewish elders in behalf of Jeremiah (Jer. xxvi. 17—19); and by Gamaliel in behalf of the apostles (Acts v. 36—39), are very apposite and striking. The speech of Rabshakeh, recorded in Isaiah xxxvi. 18—20, presents a fallacious instance of the same. The conclusion in this case is not drawn *de simili;* there was no just comparison between the omnipotent God of Israel and the idol-gods of the heathen."

If you turn to your Bible and read the texts to which Mr. Hill has referred, you will perceive that his illustrations are exceedingly apposite, and they will give you a very clear idea of the nature of induction, or reasoning from example.

4. This kind of reasoning is very common throughout the Bible; it abounds in the Psalms; the Prophets often used it; and after the captivity, when Nehemiah reproved the Jews for their violation of the sabbath, he referred to the former instances wherein such a course of conduct had provoked the Divine displeasure:—

"In those days saw I in Judah some treading wine-presses on the sabbath, and bringing in sheaves, and lading asses; as also wine, grapes, and figs, and all manner of burdens, which they brought into Jerusalem on the sabbath-day: and I testified against them in the day wherein they sold victuals. There dwelt men of Tyre also therein, which brought fish, and all manner of ware, and sold on the sabbath unto the children of Judah, and in Jerusalem. Then I contended with the nobles of Judah, and said unto them, What evil thing is this that ye do, and profane the sabbath-day? Did not your fathers thus, and did not our God bring all this evil upon us, and upon this city? yet ye bring more wrath upon Israel by profaning the sabbath."—*Neh.* xiii. 15—18.

Reasoning by example abounds in the New Testament. These examples are of various kinds, and adduced for various purposes. The eleventh chapter of the Epistle to the Hebrews is a chapter of examples, and the inference from the whole is given in the first verse of the twelfth chapter :—

"Wherefore seeing we also are compassed about with so great a cloud of witnesses, let us lay aside every weight, and the sin which doth so easily beset us, and let us run with patience the race that is set before us."

First, we have examples to be imitated :—

"Take, my brethren, the prophets, who have spoken in the name of the Lord, for an example of suffering affliction, and of patience. Behold, we count them happy which endure. Ye have heard of the patience of Job, and have seen the end of the Lord; that the Lord is very pitiful, and of tender mercy."—*James* v. 10, 11.

"The effectual fervent prayer of a righteous man availeth much. Elias was a man subject to like passions as we are, and he prayed earnestly that it might not rain: and it rained not on the earth by the space of three years and six months. And he prayed again, and the heaven gave rain, and the earth brought forth her fruit."—*James* v. 16—18.

"For after this manner in the old time the holy women also, who trusted in God, adorned themselves, being in subjection to their own husbands."—1 *Pet.* iii. 5.

Examples are adduced to be avoided :—

"Now as Jannes and Jambres withstood Moses, so do these also resist the truth: men of corrupt minds, reprobate concerning the faith. But they shall proceed no further: for their folly shall be manifest unto all men, as theirs also was."—2 *Tim.* iii. 8, 9.

"For this is the message that ye heard from the beginning, that we should love one another. Not as Cain, who was of that wicked one, and slew his brother. And wherefore slew he him? Because his own works were evil, and his brother's righteous."—1 *John* iii. 11, 12.

See also 1 Corinthians x. 6—11.

Examples are adduced worthy of imitation, in order to censure by contrast the conduct of the Jews :—

"The men of Nineveh shall rise in judgment with this generation, and shall condemn it: because they repented at the preaching

of Jonas; and, behold, a greater than Jonas is here. The queen of the south shall rise up in the judgment with this generation, and shall condemn it: for she came from the uttermost parts of the earth to hear the wisdom of Solomon; and, behold, a greater than Solomon is here."—*Matt.* xii. 41, 42.

Principles are often confirmed or illustrated by examples. The following is adduced to show that a prophet has no honour in his own country :—

"And he said, Verily I say unto you, No prophet is accepted in his own country. But I tell you of a truth, many widows were in Israel in the days of Elias, when the heaven was shut up three years and six months, when great famine was throughout all the land; but unto none of them was Elias sent, save unto Sarepta, a city of Sidon, unto a woman that was a widow."—*Luke* iv. 24—27.

The example of David, a man of decided piety, was adduced to show that, in a case of necessity, a positive law might be violated to satisfy hunger :—

"At that time Jesus went on the sabbath day through the corn; and his disciples were an hungred, and began to pluck the ears of corn, and to eat. But when the Pharisees saw it, they said unto him, Behold, thy disciples do that which is not lawful to do upon the sabbath day. But he said unto them, Have ye not read what David did, when he was an hungred, and they that were with him; how he entered into the house of God, and did eat the shewbread, which was not lawful for him to eat, neither for them which were with him, but only for the priests?"—*Matt.* xii. 1—4.

To prove that God had not cast away the Jewish people, allusion is made to the days of Elijah :—

"I say then, Hath God cast away his people? God forbid. For I also am an Israelite, of the seed of Abraham, of the tribe of Benjamin. God hath not cast away his people which he foreknew. Wot ye not what the Scripture saith of Elias? how he maketh intercession to God against Israel, saying, Lord, they have killed thy prophets, and digged down thine altars; and I am left alone, and they seek my life. But what saith the answer of God unto him? I have reserved to myself seven thousand men, who have not bowed the knee to the image of Baal. Even so then at this present time also there is a remnant according to the election of grace."—*Romans* xi. 1—5.

All the above examples appear to have been adduced

for argumentative purposes; but the following seem to have been referred to merely as illustrations:—

"But he answered and said unto them, An evil and adulterous generation seeketh after a sign; and there shall no sign be given to it, but the sign of the prophet Jonas: for as Jonas was three days and three nights in the whale's belly; so shall the Son of man be three days and three nights in the heart of the earth."—*Matt.* xii. 39, 40.

"And as Moses lifted up the serpent in the wilderness, even so must the Son of man be lifted up."—*John* iii. 14.

Agreeably to the above models, divines are in the habit of enforcing moral injunctions by scriptural examples. The following is an extract from Barrow's Sermon on the Industry of a Gentleman:—

"It is his business to administer relief to his poor neighbours, in their want and distresses, by his wealth. It is his business to direct and advise the ignorant, to comfort the afflicted, to reclaim the wicked, and encourage the good, by his wisdom. It is his business to protect the weak, to rescue the oppressed, to ease those who groan under heavy burdens, by his power; to be such a gentleman and so employed as Job was; who 'did not eat his morsel alone, so that the fatherless did not eat thereof;' who 'did not withhold the poor from their desire, or cause the eyes of the widow to fail;' who 'did not see any perish for want of clothing, or any poor without covering;' who 'delivered the poor that cried, and the fatherless, and him that had none to help him.'

"It is his business to be hospitable; kind and helpful to strangers; following those noble gentlemen, Abraham and Lot, who were so ready to invite and entertain strangers with bountiful courtesy.

"It is his business to maintain peace, and appease dissensions among his neighbours, interposing his counsel and authority in order thereto: whereto he hath that brave gentleman, Moses, recommended for his pattern.

"It is his business to promote the welfare and prosperity of his country with his best endeavours, and by all his interest; in which practice the Sacred History doth propound divers gallant gentlemen (Joseph, Moses, Samuel, Nehemiah, Daniel, Mordecai, and all such renowned patriots) to guide him."—*Knight's Half-hours with the best Authors.*

5. The examples I have hitherto brought before you have been examples of persons. But there is another kind of examples you will often meet with in your reading.

After an author has laid down a general principle, he will state an individual case by which that principle is proved or illustrated. Read the following quotations, and you will know what I mean :—

"*Be patient therefore, brethren, unto the coming of the Lord.* Behold, the husbandman waiteth for the precious fruit of the earth, and hath long patience for it, until he receive the early and latter rain."—*James* v. 7.

"*Some labourers are paid higher than others.* A carpenter earns more than a ploughman, and a watchmaker more than either; and yet this is not from the one working harder than the other.

"*And it is the same with the labour of the mind as with that of the body.* A banker's clerk, who has to work hard at keeping accounts, is not paid so high as a lawyer or a physician.

"You see, from this, that the rate of wages does not depend on the hardness of the labour, but on the *value* of the work done."—*Easy Lessons on Money Matters.*

"The invention of machinery, I allow, is often attended with much partial and temporary inconvenience and hardship; but on the other hand, *the advantages resulting from it are almost incalculable both in extent and duration.* When, for instance, the machine for weaving stockings was first invented, it was considered as a severe hardship on those who had earned a maintenance by knitting them; but the superior facility with which stockings were made in the loom, rendered them so much cheaper, that those, who before were unable to purchase them, could now indulge in the comfort of wearing them, and the prodigious increase of demand for stockings enabled all the knitters to gain a livelihood by spinning the materials that were to be woven into stockings."—*Mrs. Marcet's Conversations on Political Economy.*

"*In all slave countries there is an aversion to labour, at least an aversion to that kind of labour which is performed by slaves.* At the commencement of the Roman state, agriculture was considered honourable, and the greatest of her sons worked at the plough; but, when agriculture was performed by slaves, the citizens refrained from labour, and Rome imported her provisions from abroad. This change produced disastrous effects. As the poorer citizens could not engage in manual work, they were, when not engaged in war, dependent on the bounty of the state, and received a certain sum for their support. Had not slavery existed they might have become artisans; but, as slaves were artisans, the citizens became paupers."—*Lectures on Ancient Commerce.*

6. Reasoning by example is in great use among lawyers.

One great mode of reasoning with them is by what is called a case in point, that is, an example in point. When a case is in dispute, the plan is to show that a case similar to the present has already been decided. But the example or case adduced will not, of course, be the same in all its circumstances as the case under trial. If so, there would have been no ground for a law-suit, as the point would then have been already decided. But it is the object of the advocate to show that the case adduced establishes a principle, and that this principle thus established will apply to the case under consideration.

I do not know that I can better illustrate the case in point than by considering the argument of the Apostle Paul. His object is to prove that the apostles ought to be supported by the churches. First, then, he appeals to the ecclesiastical law of the Jews: "Do ye not know that they which minister about holy things, live of the things of the temple? and they which wait at the altar, are partakers with the altar?" This is an example—a *direct* case in point. Secondly. He refers to the civil laws of Moses. There it is enacted: "Thou shalt not muzzle the mouth of the ox that treadeth out the corn." It might be asked, How is this a case in point? What resemblance is there between the case of an unmuzzled ox and that of the apostle? The point is this; the enactment respecting the ox establishes the principle that the labourer should partake of the fruit of his labour, and this principle applied to the case of the apostles, proves that they which preach the gospel should live of the gospel. This case of the ox is then an *indirect* case in point. The reasoning is first by induction, and then by deduction.

7. Sometimes, an individual case is adduced for the purpose, not of establishing, but of overthrowing a general principle. When your opponent tries to apply a general principle to an individual case, you have two methods of reply. You may either deny the general principle, or deny that it is applicable to the case under consideration. If you adopt the first mode, you will endeavour to show that the general principle is untrue, or unjust, or inexpedient, according to the object you have in view. Here again I can give you a Scriptural example:—

"Then came to Jesus scribes and Pharisees, which were of Jerusalem, saying, Why do thy disciples transgress the tradition of the elders? for they wash not their hands when they eat bread. But he answered and said unto them, Why do ye also transgress the commandment of God by your tradition? For God commanded, saying, Honour thy father and mother: and, He that curseth father or mother, let him die the death. But ye say, Whosoever shall say to his father or his mother, It is a gift, by whatsoever thou mightest be profited by me; and honour not his father or his mother, he shall be free. Thus have ye made the commandment of God of none effect by your tradition."—*Matt.* xv. 1—6.

Here the argument is, that the disciples ought to have observed the tradition of the elders; that these traditions prohibited the taking of food with unwashed hands, and that the disciples, therefore, had violated the tradition. The reply does not deny the fact that the disciples had violated the tradition, but it attacks the tradition itself—not this individual tradition, but the whole body of traditions,—by showing that in one instance, at least, they were in opposition to the moral law. As some of these traditions were thus shown to be in direct opposition to the Divine law, the authority of all the traditions was impeached, and consequently, the one the disciples had violated was not obligatory.

As examples can often be adduced on both sides of a question, we shall have to balance one set of examples against another, in order to judge of the probability of the case under consideration. You doubt whether you will buy any shares in a Railway Company. Your friend, who is a director, tells you of several cases in which parties have become wealthy, by taking shares in such companies. Your wife tells you of other cases in which the parties have been ruined. Here you must decide according to what is called "the doctrine of chances," or more properly, the doctrine of probabilities.

"We may observe these three rules, in judging of probabilities which are to be determined by reason, relating either to things past or things to come.

"1. That which agrees most with the constitution of nature carries the greatest probability in it, where no other circumstance appears to counterpoise it: as, if I let loose a greyhound within

sight of a hare upon a large plain, there is great probability the greyhound will seize her; that a thousand sparrows will fly away at the sight of a hawk among them.

"2. That which is most conformable to the constant observations of men, or to experiments frequently repeated, is most likely to be true: as, that a winter will not pass away in England without some frost and snow; that if you deal out great quantities of strong liquor to the mob there will be many drunk; that a large assembly of men will be of different opinions in any doubtful point; that a thief will make his escape out of prison if the doors of it are unguarded at midnight.

"3. In matters of fact, which are past or present, where neither nature, nor observation, nor custom gives us any sufficient information on either side of the question, there we may derive a probability from the attestation of wise and honest men by word or writing, or the concurring witnesses of multitudes who have seen and known what they relate, &c. This testimony in many cases will arise to the degree of moral certainty. So we believe that the plant tea grows in China; and that the emperor of the Turks lives at Constantinople; that Julius Cæsar conquered France; and that Jesus, our Saviour, lived and died in Judea; that thousands were converted to the Christian faith in a century after the death of Christ; and that the books which contain the Christian religion are certain histories and epistles, which were written above a thousand years ago."—*Watts's Improvement of the Mind.*

8. Among the modes of reasoning from example, we may place the practice of divines, who in commentating on the historical parts of Scripture, raise from individual facts some general principle, containing a lesson in morals, or religion. I will explain what I mean by an example from the Rev. Matthew Henry:—

"Historical passages must be discussed by way of observation. I have seen no expositor who affords more obvious, pertinent, and edifying observations, than our excellent Mr. Henry. Those parts of holy Scripture which seem at first sight the least instructive, furnish in the hand of this ingenious man much instruction, or, at least, much opportunity of instruction. What in Scripture seems less interesting to us than, that Ebedmelech the Ethiopian drew Jeremiah out of a dungeon with cords, old cast clouts, and rotten rags? Yet our expositor observes several useful articles in this history.

"'*Fact.*—A prophet is in a dungeon.

"'*Observation.*—It is common for wicked people to look upon God's faithful ministers as their enemies.

" 'Fact.—The king could not help him.

" 'Observation.—Those will have a great deal to answer for, who, though they have a secret kindness for good people, dare not own it in a time of need.

" 'Fact.—Ebedmelech was an Ethiopian.

" 'Observation.—Some Gentiles had more equity and piety than some Jews.

" 'Fact.—Ebedmelech was a courtier.

" 'Observation.—God has a remnant in all places, among all sorts; there were saints even in Cæsar's household.

" 'Fact.—The king was sitting in the gate on public business, when Ebedmelech applied to him for the release of Jeremiah.

" 'Observation.—Whither should oppressed innocency flee for protection but to the throne? No time must be lost when life is in danger, especially a valuable life. God can raise up friends for his people in distress, where they little thought of them.

" 'Fact.—The king orders his release.

" 'Observation.—The hearts of kings are in God's hands. Let this encourage us to appear boldly for God; we may succeed better than we could have thought.

" 'Fact.—Ebedmelech took old clouts and rags from under the treasury in the king's house.

" 'Observation.—No waste should be made even in kings' palaces: broken linen, like broken meat, should be preserved for the use of the poor.

" 'Fact.—Ebedmelech directed Jeremiah to put the soft rags under his arm-holes.

" 'Observation.—Distressed people should be relieved with tenderness.

" 'Fact.—Ebedmelech did not throw the rags down; but let them down by cords.

" 'Observation.—The poor should be relieved with respect.' "—*Robinson's Notes to Claude.*

Philosophical historians adopt the same course. From the facts they relate they make observations, which, from their great importance and general application, may justly be denominated principles. And then they establish these principles by adducing other facts not connected with their immediate history. Thus Mr. Macaulay, after giving a dismal account of the character of the clergy of that day, observes: "It would be a great error to imagine, because the country rector was in general not regarded as a gentleman, because he could not dare to aspire to the hand of one of the young ladies at the manor house, because he was not asked into the parlours of the great, but was left to drink

and smoke with grooms and butlers, that the power of the clerical body was smaller than at present." Then follows the observation or principle he raises or founds on these facts. *The influence of a class is by no means proportioned to the consideration which the members of that class enjoy in their individual capacity.* This principle requires a further confirmation. Here it is: "A cardinal is a much more exalted personage than a begging friar, but it would be a grievous mistake to suppose that the college of cardinals has exercised a greater dominion over the public mind of Europe, than the order of St. Francis. In Ireland at present, a peer holds a far higher station in society than a Roman Catholic priest, yet there are in Munster and Connaught few counties where a combination of priests would not carry an election against a combination of peers."—*Macaulay's History of England,* vol. i. p. 333.

9. Examples are often employed in conversational discussion. In this case they usually assume the form of anecdotes. The *word* anecdotes signifies not published, a meaning that does not apply in our times, as all anecdotes are sure to be published, and we have volumes of them upon almost every subject.

All anecdotes are arguments. They all prove something, or may be so applied as to prove something; and they should, when related, be associated with the principle they are adapted to prove. "A writer of penetration," says Disraeli, "sees connexions in literary anecdotes which are not immediately perceived by others: in his hands anecdotes, even should they be familiar to us, are susceptible of deductions and inferences which become novel and important truths. Facts of themselves are barren: it is when these facts pass through reflections, and become interwoven with our feelings or our reasonings, that they are the finest illustrations; that they assume the dignity of 'philosophy teaching by example;' that in the moral world they are what the wise system of Bacon inculcated in the natural knowledge deduced from experiments—the study of nature in her operations. 'When examples are pointed out to us,' says Lord Bolingbroke, 'there is a kind of appeal, with which we are flattered, made to our

senses as well as to our understandings. The instruction comes then from our authority—we yield to fact when we resist speculation.'"—*Curiosities of Literature.*

The principles of morality and religion are enforced by collections of anecdotes. We have seen books, both in French and English, entitled "The Beauties of History," in which the anecdotes gleaned from history are classified under the names of the moral virtues, as Industry, Filial affection, Humanity, &c. An "Encyclopedia of Religious Anecdotes" has recently been published by the Rev. Geo. Cheever of New York; and Mr. Wilson, a Wesleyan clergyman, has published a collection under the title of "Facts and Incidents, illustrative of the Scripture Doctrines as set forth in the First and Second Catechisms of the Wesleyan Methodists."

As an anecdote records only one example, it may not of itself amount to proof; but it may be an additional item in the accumulated proofs by which a certain proposition is established. All travellers relate anecdotes denoting the peculiar characters of the people among whom they have travelled. This is in fact the chief kind of evidence we can have upon the subject. Travellers into the East have recorded many anecdotes tending to explain some of the passages of the Holy Scriptures. On this ground "Burder's Oriental Customs" and the writings of Dr. Kitto are exceedingly valuable. Some anecdotes refer only to individual character. You have an abundance of them in Boswell's Life of Johnson.

Anecdotes have often a good effect when discreetly related at public meetings. The Rev. R. Bickersteth of Clapham, in a speech before the Tract Society, thus illustrates the advantages that may be obtained from the union of a great number of small exertions:—

"He remembered to have heard of a vessel being wrecked in one of the beautiful bays on the coast of that beautiful island—Jersey. A number of the inhabitants crowded the cliff, and looked on with feelings of despair, for they felt that it was hopeless to attempt doing anything for the crew. At length it was suggested by one present that they should all hurry away, to find as much rope as possible, and then return to try to aid those who were in such jeopardy. The advice was acted upon, and some

brought long pieces, and some short. Joining them all together, they stretched the united rope from cliff to cliff, suffering the middle of it to dip down into the unfortunate vessel stranded on the rocks. By that means the poor mariners were enabled to lash themselves to the cord, and were drawn up safely to the top of the cliff. Those who went to fetch the rope did not argue, because they could not bring a long piece, that therefore their contribution was useless; but they brought as much as they could, and all joined together effected the rescue."

Anecdotes in Natural History are always agreeable and instructive. The following is intended to show the force of instinct:—

"'A friend of mine,' says Mr. Bailly, 'a man of understanding and strict veracity, related to me these two facts, of which he was an eye-witness. He had a very intelligent ape, to whom he amused himself by giving walnuts, of which the animal was extremely fond. One day he placed them at such a distance from the ape, that the animal, restrained by his chain, could not reach them: after many useless efforts to indulge himself in his favourite delicacy, he happened to see a servant pass by with a napkin under his arm; he immediately seized hold of it, whisked it out beyond his arm to beat the nuts within his reach, and so obtained possession of them.—His mode of breaking the walnut was a fresh proof of his inventive powers; he placed the walnut upon the ground, let a great stone fall upon it, and so got at its contents. One day the ground on which he had placed the walnut was so much softer than usual, that, instead of breaking the walnut, the ape only drove it into the earth: what does the animal do? he takes up a tile, places the walnut upon it, and *then* lets the stone fall, while the walnut is in this position.'"—*Sydney Smith's Moral Philosophy.*

We transcribe the following anecdotes from Sydney Smith, as illustrating the nature of wit, of a pun, and of a bull:—

"WIT.—Louis XIV. was exceedingly molested by the solicitations of a general officer at the levee, and cried out loud enough to be overheard, 'That gentleman is the most troublesome officer in the whole army.' The officer replied, 'Your majesty's enemies have more than once said the same thing.'"

"A PUN.—Miss Hamilton, in her book on education, mentions the instance of a boy so very neglectful that he could never be brought to read the word *patriarchs*, but whenever he met with it he always pronounced it partridges. A friend of the writer

observed to her that it could hardly be considered as a mere piece of negligence, for it appeared to him that the boy, in calling them partridges, was *making game* of the patriarchs."

"A BULL.—A gentleman, in speaking of a nobleman's wife of great rank and fortune, lamented very much that she had no children. A medical gentleman who was present observed, that to have no children was a great misfortune, but he thought he had remarked that it was *hereditary* in some families."

It has occurred to me that all the rules of logic might be illustrated by anecdotes. If, gentle reader, you are a collector of anecdotes, I advise you to make the experiment by arranging them in such an order as that they shall illustrate the principles and reasonings you find in this book. Should you do this cleverly, and then publish your collection under the title of "Logic taught by Anecdotes," your book will be more generally understood, and possibly be more beneficial to the community than the "Logic" of the Archbishop of Dublin. To explain what I mean I will give you an example or two. To show that of two events the last that occurs is not necessarily the effect of the former, you can refer to Tenterden Steeple and the Goodwin Sands, and relate it as an anecdote. The following anecdote, which I cut out of a religious newspaper, will explain "reasoning by analogy:"—

"THE DIVINE AND THE DOCTOR.—A devout minister was once asked by a sceptic if he followed preaching to save souls: and on replying that he did, the caviller rejoined, 'Did you ever see a soul?' 'No.' 'Did you ever hear a soul?' 'No.' 'Did you ever taste a soul?' 'No.' 'Did you ever smell a soul?' 'No.' 'Did you ever feel a soul?' 'Yes, thank God!" said the preacher. 'Well,' said the cavilling doctor, 'there are four out of the five senses against one that there is no soul.' So the matter might have dropped; but the preacher, as subtle in understanding as he was pious in heart, turned the table upon the cavilling doctor, and being informed that he was a doctor of medicine, asked:—'Did you ever see a pain?' 'No;' was the reply. 'Did you ever hear a pain?' 'No.' 'Did you ever taste a pain?' 'No.' 'Did you ever smell a pain?' 'No.' 'Did you ever feel a pain?' 'Yes,' said the doctor. 'Well, then,' rejoined the preacher, 'there are, you see, also four senses against one to prove that there is no such thing as a pain; and yet, sir, you know that there is such a thing as pain, and I know that

there is a soul.' The doctor appeared confounded, and walked off."

If you want to adduce an example of courtesy in controversy, you can name the late Dr. Pye Smith :—

"He was in manners elaborately polite,—what is called 'of the old school;' and this went with him into controversy, so that he often conducted it with all the expressions of the most polished courtesy. His first work was a series of 'Letters to Mr. Belsham,' the once well-known Socinian minister of Essex-street, and was so pervaded by the property referred to, that it gave offence to some of the ruder sort: hence Andrew Fuller criticised it by saying, '*That* was not the way Peter addressed heretics; *he* did not say to Simon Magus, "My dear Sir, pardon my apprehensions, but I fear you are under some serious mistake;" no, his words were thunder and fire—"Thou child of the devil—enemy of all righteousness—how long wilt thou continue to pervert the true ways of the Lord?"'"—*Christian Times.*

Should you wish to expose the habit of quibbling on words, you can relate the following anecdote of Dr. Franklin :—

"Dr. Franklin had no taste for verbal criticism. On one occasion, when the Senate of Pennsylvania were engaged in a long discussion upon the *wording* of a resolution, he retired to one of the back seats, and engaged in conversation with a friend on this subject. He said: 'When I was a journeyman printer, a young tradesman, named John Owen, who was about to set up business as a ropemaker, came into the printing-office, and asked us what writing he should place over his shop window. The foreman immediately wrote on a board, "John Owen, Ropemaker, makes and sells ropes;" with a coil of rope at the end. One man objected to the word *ropemaker*, as superfluous; for if he made ropes, he was certainly a ropemaker. This word was accordingly struck out. Another objected to *makes*. He said, "Your workmen *make* the ropes, not you, and if you sell good ropes, people won't care whether you make them or not." The sentence then stood—"John Owen sells ropes." "John Owen sells ropes!" exclaimed another; why, who would suppose you intended to give them away? what do you open a shop for but to sell them?" The word *sells* was then struck out, and *ropes* followed of course. Nothing then remained but "John Owen," and a coil of rope. "John Owen, and a coil of rope," says another; "that is as much as to say that John Owen deserves to be hanged: I would never have a coil of rope placed after my name." The coil of rope was

then struck out, and the announcement was reduced to plain *John Owen.*'"—*Anon.*

And the rule that when you have advanced arguments enough to prove your point you should advance no more, may be enforced by the following:—

'"EIGHTEEN REASONS FOR ABSENCE.—The Prince of Condé passing through Beaune, the public authorities went to meet him at the gates of the town. After many high-flown compliments, the mayor added:—'To display our joy, we wished to receive you with the reports of a numerous artillery, but we have not been able to fire the cannons for eighteen reasons;—in the first place, we have none: secondly,'—'My good friend,' said the prince, 'the first reason is so good, I will excuse the other seventeen.'"—*Laughing Philosopher.*

It is well to store our minds with anecdotes. But every anecdote should be associated with some principle that it is adapted to prove or to illustrate. Then the recollection of the anecdote will remind us of the principle, and the recollection of the principle will remind us of the anecdote. When you relate them, they should be related in illustration of the principle that may be the subject of the conversation, and introduced with propriety and good taste. Do not tell *long* anecdotes, as they will become tedious. If any other person is about to relate an anecdote, observe how he relates it, that you may learn to relate it better yourself. There is an art in this as in other things. It is generally best to begin with the time or occasion when the event occurred, then the persons, and then the actions. The following will illustrate the order I mean:—"*In the beginning* God created the heavens and the earth." "*While he was teaching in the temple* the Pharisees came unto him." The gist or point of the anecdote should always be related last. To learn how anecdotes can be related argumentatively, read Isaac Disraeli's Curiosities of Literature.

SECTION II.

REASONING FROM ANALOGY, COMPARISON, AND CONTRAST.

ANALOGY is different from either deduction or induction. The word analogy means resemblance. By "reasoning from analogy" we mean reasoning about one thing from its resemblance to another thing.

1. The following are examples of this kind of reasoning:

"And, behold, there was a man which had his hand withered. And they asked him, saying, Is it lawful to heal on the sabbath days? that they might accuse him. And he said unto them, What man shall there be among you, that shall have one sheep, and if it fall into a pit on the sabbath day, will he not lay hold on it, and lift it out? How much then is a man better than a sheep? Wherefore it is lawful to do well on the sabbath days."—*Matt.* xii. 10—12

"It would be a very curious question to agitate, how far understanding is transmitted from parent to child; and within what limits it can be improved by culture: whether all men are born equal with respect to their understanding; or whether there is an original diversity antecedent to all imitation and instruction. The analogy of animals is in favour of the transmissibility of mind. Some ill-tempered horses constantly breed ill-tempered colts; and the foal never has seen the sire,—therefore, in this, there can be no imitation. If the eggs of a wild duck are hatched under a tame duck, the young brood will be much wilder than any common brood of poultry: if they are kept all their lives in a farm-yard, and treated kindly, and fed well, their eggs hatched under another bird produce a much tamer race."—*Sydney Smith's Sketches of Moral Philosophy.*

"We heartily despise the man, in an intellectual point of view, who shuts his ears against a rational appeal to his understanding, solely because there may be some deviation in the speaker's language from the authorized mode of pronunciation; so in like manner ought we to lightly esteem the person who wishes to entangle us, at every step of our reasoning, by demanding captious and trifling verbal definitions. The one habit is just as indicative of a little and narrow mind as the other; and both habits must effectually destroy that candid and dispassionate frame of mind

on which our progress in real wisdom vitally depends."—*Blakey's Logic.*

"I suppose it will be allowed, that, to advance a direct falsehood, in recommendation of our wares, by ascribing to them some quality which we know that they have not, is dishonest. Now, compare with this the designed concealment of some fault, which we know that they have; the motive in these two cases is the same, and the prejudice to the buyer is also the same."

"The practice of passing bad money is sometimes defended by a vulgar excuse, that we have taken the money for good, and must therefore get rid of it. Which excuse is much the same as if one who had been robbed on the highway, should imagine he had a right to reimburse himself out of the pocket of the first traveller he met."—*Paley's Moral Philosophy.*

2. We shall now show the application of this kind of reasoning to several of the sciences.

"In almost every department of human knowledge," says Mr. Blakey, "analogical reasonings are employed to a great extent, and are found to be of great utility. In the science of comparative anatomy, for example, it is of singular importance to trace out the resemblances between the structures of different animals, their organs of sensation, digestion, and motion; and from this analogical inquiry we may draw useful conclusions for the government of our own conduct and constitution, and the promotion of our interests. For example, we make experiments with certain kinds of food on the digestive organs of dogs, and from these we *infer* or *draw conclusions* that such and such effects will result to ourselves from taking these same kinds of food: and these experiments have often led to the formation of rules of diet and regimen of considerable importance to our bodily health. Many highly beneficial discoveries in medicine may be traced to experiments and observations made upon the inferior animals, founded upon the resemblance between their functions of life and our own."

The principle of analogy has been applied to some of our reasonings in connexion with astronomy. We have given you one example of this at page 39.

"A person on the earth can no more be sensible of its undisturbed motion on its axis, than one in the cabin of a ship on

smooth water, can be sensible of the ship's motion, when it turns gently and uniformly round. It is, therefore, no argument against the earth's diurnal motion, that we do not feel it, nor is the apparent revolution of the celestial bodies every day a proof of the reality of these motions, for whether we or they revolve, the appearance is the very same. A person looking through the cabin windows of a ship, as strongly fancies the objects on land to go round when the ship turns, as if they were actually in motion."—*Encyclopædia Britannica.*

The principle of analogy is also often employed in our moral reasonings.

"Public companies are analogous to other collective bodies who are acknowledged to be moral agents.

"It will not be denied that a *nation* may declare an *unjust* war —may carry it on in a *cruel* manner—may treat a conquered nation with *oppression*, or may conduct a treaty of peace with *duplicity* and *fraud*. Nor will it be denied, that a nation may become immoral by the extinction of moral feeling in its rulers, and throughout the population."

"As, then, large bodies of men, like nations, are rewarded or punished in their collective capacity, for their virtuous or vicious actions, it would seem to follow, that smaller bodies of men, like public companies, may be subjected to the same moral discipline.

"A public company, like a nation, is composed of a number of individuals who have a government for the regulation of their affairs, and whose acts are considered as the acts of the whole body. It is true that a public company is composed of a smaller number of persons than a nation, but that cannot affect the moral character of its actions. It is also true, that while a nation must always act through its government, a public company may, and often does, at the general meeting of its shareholders, act independently of its government; but neither can this alter its moral agency, for whether the form of government be aristocratical or democratical, the duties of a nation, or of a public company, remain the same.

"In opposition to this doctrine, it may be contended that, to render public bodies of men responsible in their collective capacity, would be destructive of personal or individual responsibility. But this is not the case. A nation may be punished for its national crimes, and yet the individual who may have caused these crimes, may sustain an individual punishment. Thus Jeroboam, Ahab, and other kings of Israel were individually punished, while, at the same time, the nation was also punished in its collective capacity. So a public company may be punished or rewarded for its actions, while, at the same time, any individual who caused

these actions, may also be personally rewarded or punished. It may too be objected, that if a public company is to be punished, as such, for its acts, then all the partners would share in the punishment, though many of them may have been quite innocent of the crime. To this we answer, that the same objection would apply to the doctrine of national responsibility.* It is not possible in the case of a large body of men, for every individual to take part in its actions. The act of the authorized government, or of the majority of the members, must be regarded as the act of the whole community, and every individual must share in the prosperity or adversity resulting from such acts."—*Gilbart's Practical Treatise on Banking.*

Analogy is also used in legal argumentation :—

"When a point of law has been once adjudged, neither that question, nor any which completely and in all its circumstances corresponds with *that*, can be brought a second time into dispute: but questions arise, which resemble this only indirectly and in part, in certain views and circumstances, and which may seem to bear an equal or a greater affinity to other adjudged cases; questions which can be brought within any affixed rule only by analogy, and which hold a relation by analogy to different rules. It is by the urging of these different analogies that the contention of the bar is carried on: and it is in the comparison, adjustment, and reconciliation of them with one another; in the discerning of such distinctions, and in the framing of such a determination, as may either save the various rules alleged in the cause, or, if that be impossible, may give up the weaker analogy to the stronger, that the sagacity and wisdom of the court are seen and exercised. Amongst a thousand instances of this, we may cite one of general notoriety, in the contest that has lately been agitated concerning literary property. The personal industry which an author expends upon the composition of his work, bears so near a resemblance to that by which every other kind of property is earned, or deserved, or acquired; or rather there exists such a correspondency between what is created by the study of a man's mind, and the production of his labour in any other way of applying it,

* The logical reader need not be reminded, that in arguments from analogy it is a sufficient answer to an objection to show that the objection applies with equal force to the doctrine from which the analogy is drawn. Thus, in the text, the moral responsibility of nations is assumed as admitted by all parties, and, therefore, requiring no further proof. From the resemblance, or analogy between the two cases, we infer the moral responsibility of public companies. It is, therefore, a sufficient answer to any objection against the latter doctrine, to show that it will equally apply to the former. Indeed, the more numerous the objections, if they will apply equally in both cases, the more the argument is strengthened; as they are confirmatory of the soundness of the analogy.

that he seems entitled to the same exclusive, assignable, and perpetual right in both; and that right to the same protection of law. This was the analogy contended for on one side. On the other hand, a book, as to the author's right in it, appears similar to an invention of art, as a machine, an engine, a medicine: and since the law permits these to be copied, and imitated, except where an exclusive use or sale is reserved to the inventor by patent, the same liberty should be allowed in the publication and sale of books. This was the analogy maintained by the advocates of an open trade. And the competition of these opposite analogies constituted the difficulty of the case, as far as the same was argued, or adjudged upon principles of common law.—One example may serve to illustrate our meaning: but whoever takes up a volume of Reports, will find most of the arguments it contains capable of the same analysis; although the analogies, it must be confessed, are sometimes so entangled as not to be easily unravelled, or even perceived."—*Paley's Moral Philosophy.*

Analogy is used in political economy. Thus an analogy is drawn between labour and commodities, in order to show that labour ought to be free.

"A labourer is a seller of labour; his employer is a buyer of labour, and both ought to be left free. If a man chooses to ask ever so high a price for his potatoes, or his cows, he is free to do so; but then it would be very hard that he should be allowed to force you to buy them at that price, whether you would or no. In the same manner, an ordinary labourer may *ask* as high wages as he likes; but it would be very hard to *oblige* others to employ him at that rate, whether they would or not. And so the labourer himself would think, if the same rule were applied to him; that is, if a tailor, and a carpenter, and a shoemaker, could oblige him to employ them, whether he wanted their articles or not, at whatever price they chose to fix."—*Easy Lessons on Money Matters.*

The following analogy is drawn between interest and rent:—

"I have said that there is no real difference between paying for the loan of money, and for the loan of anything else. For suppose I have one hundred pounds lying by me, you will easily see that it comes to the same thing, whether I buy a house or a piece of land with the money, and let it to my neighbour at so much a-year, or whether I lend him the money to buy the house or the land for himself, on condition of his paying me so much a-year for the use of my money. But in the one case his yearly payment would be called Rent; and in the other case it gets the name of Interest."—*Easy Lessons on Money Matters.*

Mr. Macculloch's fondness for generalization has sometimes led him into singular analogies. Thus, when discussing the utility of machinery, he observes: "Every individual who has arrived at maturity, though he may not happen to be initiated in any particular art or profession, may with perfect propriety be viewed as a machine which has cost twenty years of assiduous attention, and the expenditure of a considerable capital to construct." A further outlay of capital may improve the machine. "And if a further sum has been laid out in educating, or qualifying him for the exercise of a business or profession requiring manual skill, his value will be proportionably increased, and he will be entitled to a greater reward for his exertions—just as a machine becomes more valuable when new powers are given to it by the expenditure of additional capital or labour in its construction."

Arguments from analogy are often employed in theology to refute objections that have been advanced against Divine revelation. Thus, should one object to Christianity that God is represented as refusing to pardon offences even upon the sincere repentance of the offender, it may be replied, that in the moral government of the world, we do not find that the effects of sin are removed even upon sincere repentance: thus, if a man gamble away his property, sincere repentance will not bring it back; should he ruin his constitution by intemperance, and then repent, his repentance will not restore his health; should he, by a mean or unjust action, damage his reputation, and then repent of his crime, his repentance will not bring back his good name. Thus it is not a doctrine of natural any more than of revealed religion, that God will pardon sin upon repentance without an atonement.

In the present life your happiness or misery will in many cases depend upon your own actions. It is therefore possible that your happiness or misery in the future world will depend upon your actions in the present world.

If it be objected that the duration of happiness or misery in the future world is disproportionate to the duration of the crime, it may be replied, that such is the case

to a certain degree in the present world, for one short act of imprudence or folly committed in early years will sometimes embitter a whole life.

This kind of argument is used rather to remove objections than to adduce proof.

Many similar cases may be seen in "Butler's Analogy."

Analogical reasoning abounds in the Holy Scripture:—"A son honoureth his father, and a servant his master: if then I be a father, where is mine honour? and if I be a master, where is my fear?" (Malachi i. 6.)

"And the ruler of the synagogue answered with indignation, because that Jesus had healed on the sabbath day, and said unto the people, There are six days in which men ought to work: in them therefore come and be healed, and not on the sabbath day. The Lord then answered him, and said, Thou hypocrite, doth not each one of you on the sabbath loose his ox or his ass from the stall, and lead him away to watering? and ought not this woman, being a daughter of Abraham, whom Satan hath bound, lo, these eighteen years, be loosed from this bond on the sabbath day?" (Luke xiii. 14—16.)

Some divines occasionally preach analogically; that is, they apply their text to some topic different from that to which it originally referred. The Rev. Matthew Wilks preached sometimes from singular, but at the same time appropriate, texts. A sermon of his, on "Unsanctified Prosperity," was preached from "Jeshurun waxed fat and kicked;" another, on "Little Sins," from "Catch us the foxes, even the little foxes, that spoil the vines." His sermon before the London Missionary Society was from Jeremiah vii. 18:—"The children gather wood, and the fathers kindle the fire, and the women knead their dough, to make cakes to the queen of heaven, and to pour out drink offerings unto other gods, that they may provoke me to anger." From "the children gather wood," he urged the formation of *Juvenile* Missionary Societies. We have read a printed sermon, entitled "The devil driving his hogs to market;" the text was Mark v. 12, 13:—"And all the devils besought him, saying, Send us into the swine, that we may enter into them. And forthwith Jesus gave them leave. And the unclean spirits went out, and entered into the

swine: and the herd ran violently down a steep place into the sea, (they were about two thousand;) and were choked in the sea." The possessed swine that ran violently down a steep place till they perished in the sea, were considered to represent vicious men, who under the influence of the devil are urged forward in a course that ends in their destruction. It is said that when Mr. Pitt, the prime minister, then a young man, visited one of the universities, a dignitary of the Church preached from John vi. 9:—"There is a lad here, which hath five barley loaves, and two small fishes: but what are they among so many?" And a pleasant anecdote is related of the Duke of Ormond (whose family name was Butler), when Viceroy of Ireland, being reminded of a promise of preferment he had made to a worthy clergyman named Joseph, by a sermon which the latter preached in the Castle Chapel from Gen. xl. 23: "Yet did not the chief butler remember Joseph, but forgat him."

The Rev. John Newton defended forms of prayer upon the analogy that exists between such forms and psalms and hymns—all being acts of devotion:—

> "Crito freely will rehearse
> Forms of prayer and praise in verse;
> Why should Crito then suppose
> Forms are sinful when in prose?"

3. Analogy influences our reasonings very much by the extent to which it has contributed to the formation of language.

"The faculty of association is not employed merely in the formation of new words, but it leads also to the application of old words to new ideas. Sometimes the material of which anything was formed was employed to denote the thing itself, as a stick, a horn, a stone. The name of one object was also applied to some other, to which it seemed to bear a resemblance. Thus, the word branch, which denotes a part of a tree, is applied to a part of almost every object that is capable of division; hence we speak of the branch of a road, the branch of a river, the branch of a family, the branch of a discourse.

"Words which were originally employed to denote sensible objects were afterwards applied to intellectual ideas. The last object to which man directs his attention, and that which he finds

the most difficult to comprehend, are the powers of his own mind. Hence mankind have usually a large stock of words denoting sensible ideas before they think of naming those ideas which are intellectual. And the operations of the mind can scarcely be understood but by comparison with external objects. Mankind, therefore, having found or fancied some resemblance between sensible and intellectual ideas, applied the same words to both. In all languages we find that words denoting intellectual ideas, when traced to their origin, are taken from sensible objects, and were at first metaphors. The words *understanding*, *evidence*, *reflection*, as well as the words I have employed to denote the faculties of *invention*, *association*, and *abstraction*, are all taken from objects of sense. These words have now lost their metaphorical meaning, and have become quite literal, through being so frequently used. So we still speak of a man being burning with zeal, inflamed with anger, swollen with rage, and inflated with pride; and by the same figure of speech we talk of a man having a hard heart, or a soft heart; a thick head, or a long head; a fertile imagination, a sound judgment, a strong memory, polished manners. And when we recommend circumspection to an individual, we tell him to 'look sharp.'

"By the same principle of association, we apply to inanimate objects words denoting ideas peculiar to animals. Thus we speak of the head of a river, the face of a country, a neck of land, and an arm of the sea; of a running stream, and a standing pool; we say the ground thirsts for rain; the earth smiles with plenty; and so we speak of a learned age, a happy period, and a melancholy disaster.

"It may be observed, that in order to form an association between any two ideas in the mind, it is by no means necessary that there should be any resemblance between the ideas themselves. The mind is exceedingly capricious in its associations, and this caprice is abundantly evident in the formation of language. In former times young women employed a good deal of their time in spinning; the idea of spinning became associated with the idea of a young woman; and, to this day, an unmarried lady is called a spinster. It was also usual to keep footboys, who were generally styled Jack, as a sailor is styled Jack in the present day. One part of the duty of a footboy was to pull off his master's boots. But in the progress of society an instrument was invented, by which the master could take off his own boots; and this instrument was called a Jack. Another part of the business of a footboy was to turn the spit; but here, too, manual labour was superseded by machinery. An instrument was invented, by which a piece of meat could be roasted without the assistance of Jack; but his name was still retained, and the new instrument was called a Jack. Mr. Arkwright called some parts

of his cotton machinery Spinning Jennies. The words Jack and Jenny, therefore, awaken very different ideas from those to which they were first applied.

"The power of association may from one word form a variety of others; and although all the derivations may bear some resemblance to the primitive word, yet they may have meanings widely different from each other. Thus, the word *get* means to acquire; but it is used in a variety of senses: a man may get hungry, or he may get wet; he may get a wager, or he may get a cold; he may get money, or he may get drunk. By associating the word get with particles, the number of meanings is still further increased: we may get in or get out, we may get off or get on, we may get up or get down, we may get through or get along. Each of these phrases has again a variety of meanings. When we say a man has got off, we mean that he has alighted from his horse, or that he has escaped being hanged. But in all these various meanings the primitive idea is retained, though the derivatives differ so widely. I might illustrate this observation by numerous other words of the same kind."—*Lecture on the Philosophy of Language.*

Analogy is the foundation of nearly the whole of our figurative language. Lindley Murray observes that "figures of speech frequently give us a much clearer and more striking view of the principal object than we could have if it were expressed in simple terms and divested of its accessory idea. By a well-chosen figure even conviction is assisted, and the impression of a truth upon the mind made more lively and forcible than it would otherwise be. We perceive this in the following illustration of Young—'When we dip too deep into pleasure we always stir a sediment that renders it impure and noxious:' and in this instance, 'A heart boiling with violent passions will always send up infatuating fumes to the head.' An image that presents so much congruity between a moral and a sensible idea serves like an argument from analogy to enforce what the author asserts, and to induce belief."

However useful metaphors may be in impressing the mind more forcibly with the clearness of a truth, we must be cautious in adopting them as arguments. In Monsieur Bastiat's "Popular Fallacies regarding General Interests," translated by Mr. G. R. Porter, we have the following illustrations of erroneous reasoning from metaphors.

"A French iron-master says, Let us preserve ourselves from the *invasion* of English iron. An English landlord exclaims, Let us repel the *invasion* of French corn. And they propose to raise barriers between the two nations. Barriers occasion non-intercourse; non-intercourse leads to hatred; hatred to war; war to *invasion*. What matters it? say the two *sophists;* is it not better to be exposed to an eventual *invasion* than to agree to a certain *invasion?* And the people believe them, and the barriers remain.

"And nevertheless what analogy is there between an exchange and an *invasion?* What similitude can possibly be established between a ship of war, which comes to vomit upon our cities fire, sword, and devastation; and a merchant-ship, which comes and offers us to barter freely, voluntarily, foreign productions for ours?

"I shall say the same of the word *inundation*. This word is taken ordinarily in a bad sense, because it is the general characteristic of inundation to lay waste the fields and the crops. If, however, they leave upon the soil a value superior to that which they take away, like the inundations of the Nile, we should follow the example of the Egyptians, bless them and deify them. Well then, before declaiming against the *inundations* of foreign products, before placing in their way troublesome and costly obstacles, do we ask if they are among those inundations which lay waste or those which fertilize?"

"Among the *metaphors* which conceal an altogether fatal theory, there is none more commonly used than that put forward in the words *tribute, tributary*.

"These words have become so common, that they are used as synonymes of *purchase, purchaser*, and the words are used indifferently, for the one or the other.

"But nevertheless, there is as great a difference between *tribute* and *purchase*, as between *theft* and *exchange*, and I would just as soon hear it said that Cartouche has broken open a strong box and has *purchased* a thousand crowns, as I would hear our honourable deputies repeat: We have paid to Germany a *tribute* for a thousand horses which she has sold to us.

"For that which renders Cartouche's action no *purchase* is, that he has not put, and with my consent, into my strong box, a value equivalent to that which he has taken out.

"And that which causes the payment of 500,000 francs, which we have made to Germany, to be no *tribute*, is because she has not received it gratuitously, but by giving us in exchange a thousand horses which we ourselves have judged to be worth our 500,000 francs."

"How has this improper trope found its way into the rhetoric of the monopolists? Some money *leaves the country* to satisfy the rapacity of a victorious enemy. Some more money *leaves the*

country also to pay for merchandise. They establish the analogy between the two cases by only taking into account the circumstances in which they resemble each other, and leaving out of the question those in which they differ."

The language of satire is usually the language of analogy. Logic and wit are far oftener associated than opposed, and satire will sometimes succeed where reasoning fails. Writers on public questions often employ this weapon. The political and religious parties that existed in England in the reign of George I. were represented by Dean Swift in his description of the parties in Lilliput. The political parties were distinguished from each other by the high and low heels of their shoes. The heir apparent (afterwards George II.) wore one heel higher than the other, which gave him a hobble in his gait—he was evidently halting between two opinions. The religious parties were styled the Big-endians and the Little-endians; the former always broke their eggs before they ate them on the big end, the latter on the little end. The words of their prophet were, "Let all true believers break their eggs on the most convenient end." A few statesmen thought this meant "that every true believer should break his egg on that end which seemed to him to be the most convenient." But this construction was not generally admitted, and many hundred large volumes had been published on the controversy. In his "Tale of a Tub" the Dean has, in the supposed adventures of three brothers, Peter, Martin and Jack, given what he deems a representation of the Catholic, Lutheran, and Calvinistic churches.

All caricatures are founded on the principle of analogy. So are the weekly representations in *Punch*. The last prorogation of Parliament was represented by "Lord John Russell shutting up shop," and the opening of the present session by "The Writing Lesson," in which Lord John Russell is guiding the hand of the Queen when writing the speech from the throne. This kind of representation is sometimes found in the sacred writings.

"Then Amaziah sent messengers to Jehoash, the son of Jehoahaz son of Jehu, king of Israel, saying, Come, let us look one another in the face. And Jehoash the king of Israel sent to Amaziah king of Judah, saying, The thistle that was in Lebanon

sent to the cedar that was in Lebanon, saying, Give thy daughter to my son to wife: and there passed by a wild beast that was in Lebanon, and trode down the thistle. Thou hast indeed smitten Edom, and thine heart hath lifted thee up: glory of this, and tarry at home: for why shouldest thou meddle to thy hurt, that thou shouldest fall, even thou, and Judah with thee?"—2 *Kings* xiv. 8—10.

And Elijah addressed the priests of Baal in the language of satire.

"And it came to pass at noon, that Elijah mocked them, and said, Cry aloud: for he is a god; either he is talking, or he is pursuing, or he is in a journey, or peradventure he sleepeth, and must be awaked."—1 *Kings* xviii. 27.

This is sound reasoning as well as satire. It contains an argument from the relation of subject and attribute. A God must possess omnipresence and omniscience, and as Baal did not possess these attributes, it was a proof that he was no God.

4. An analogy means a relation or agreement between two or more things, which in other respects are entirely different. But when there are several points of agreement, it is not then an analogy, but a comparison. We make comparisons between different persons, qualities, and actions. Dr. Watts gives the following examples of arguments founded on comparison:—"Knowledge is better than riches; virtue is better than knowledge; therefore, virtue is better than riches. A dove will fly a mile a minute; a swallow flies swifter than a dove; therefore a swallow will fly more than a mile a minute." In the book of Proverbs, comparisons abound:—

"Better is a little with righteousness,
Than great revenues without right.
How much better is it to get wisdom than gold;
And to get understanding, rather to be chosen than silver.
Better is it to be of an humble spirit with the lowly,
Than to divide the spoil with the proud.
He that is slow to anger is better than the mighty;
And he that ruleth his spirit, than he that taketh a city."

The following comparison is drawn by the Rev. Sydney Smith, between books and conversation:—

"A book has no eyes, and ears, and feelings; the best are apt

every now and then to become a little languid; whereas a living book walks about, and varies his conversation and manner, and prevents you from going to sleep. There is certainly a great evil in this, as well as a good; for the interest between a man and his living folio becomes sometimes a little too keen, and in the competition for victory they become a little too animated towards, and sometimes exasperated against each other; whereas a man and his book generally keep the peace with tolerable success; and if they disagree, the man shuts his book, and tosses it into a corner of the room, which it might not be quite so safe or easy to do with a living folio. It is an inconvenience in a book, that you cannot ask questions; there is no explanation; and a man is less guarded in conversation than in a book, and tells you with more honesty the little niceties and exceptions of his opinions; whereas, in a book, as his opinions are canvassed where they cannot be explained and defended, he often overstates a point for fear of being misunderstood; but then, on the contrary, almost every man talks a great deal better in his books, with more sense, more information, and more reflection, than he can possibly do in his conversation, because he has more time."—*Moral Philosophy.*

"'Twould add thirty years to your life—and think what a blessing that would be to me; not that I shall live a tenth part of the time—thirty years, if you'd take a nice little house somewhere at Brixton. *You hate Brixton?* I must say it, Caudle, that's so like you: any place that's really genteel, you can't abide. Now Brixton and Balaam Hill I think delightful. So select! There, nobody visits nobody, unless they're somebody. To say nothing of the delightful pews that make the churches so respectable.

"'However, do as you like. If you won't go to Brixton, what do you say to Clapham Common? Oh, that's a very fine story! Never tell me! No; you wouldn't be left alone, a Robinson Crusoe with wife and children, because you're in the retail way. What! *The retired wholesales never visit the retired retails at Clapham?* Ha! that's only your old sneering at the world, Mr. Caudle; but I don't believe it. And after all, people should keep to their station, or what was this life made for? Suppose a tallow-merchant does keep himself above a tallow-chandler,—I call it only a proper pride. What? *You call it the aristocracy of fat?* I don't know what you mean by aristocracy; but I suppose it's only another of your dictionary words, that's hardly worth the finding out.

"'What do you say to Hornsey or Muswell Hill? Eh? *Too high?* What a man you are! Well then—Battersea? *Too low?* You're an aggravating creature, Caudle, you must own that! Hampstead, then? *Too cold?* Nonsense; it would brace you up

like a drum, Caudle; and that's what you want. But you don't deserve anybody to think of your health or your comforts either. There's some pretty spots, I'm told, about Fulham. Now, Caudle, I won't have you say a word against Fulham. That must be a sweet place: dry, and healthy, and every comfort of life about it—else is it likely that a bishop would live there?'"—*Mrs. Caudle's Curtain Lectures.*

"We read in Scripture, that when the Jews returned from the captivity, and began to rebuild the walls of their city, they were so beset by enemies, that they were forced to be constantly armed, and on their guard; and, for fear of a sudden attack, each man worked with one hand only, and the other hand held a weapon ready. In this way it would take at least two men to do the work of one. But the danger they were in obliged them to put up with this inconvenience.

"Many countries in the East are at this day nearly in the same condition. They are so infested by robbers (chiefly Arabs), always roaming about in search of plunder, that no man can hope to escape being robbed, unless he is well armed, and on his guard. Travellers tell us, that when a husbandman goes to sow his fields, he takes with him a companion with a sword or spear, to protect him from being robbed of his seed-corn. This must make the cultivation of the ground very costly; because the work which might be done by one man requires two; one to labour and the other to fight. And both must have a share of the crop which would otherwise belong to one."

"The expenses of the army and navy, and of every thing that Government provides, are paid by the people. And it is but fair that we should pay for all these things, since they are for our benefit. We pay taxes and government-duties for these purposes: taxes are the price people pay for being governed and protected. They answer to the hire which the husbandman in Eastern countries must pay to his companion, who carries the spear or sword to guard him from robbers."—*Easy Lessons on Money Matters.*

Comparison is a principle of extensive use in reasoning. In deliberating upon any step we are about to take, we make a comparison between the good and the evil effects it is likely to produce. We make comparisons between different men, and different qualities, and different actions, and between the laws and customs of different countries; and we approve or disapprove, according to the award of our judgments. And indeed our descriptions of persons, places, and things, consist chiefly of points of comparison with other persons, places, and things.

"Lord Campbell says of Holt:—'Of all the lawyers in our annals, Holt has gained the highest reputation, merely by the exercise of judicial functions. He was not a statesman like Clarendon—he was not a philosopher like Bacon—he was not an orator like Mansfield; yet he fills nearly as great a space in the eye of posterity; and some enthusiastic lovers of jurisprudence regard him with higher veneration than any English judge who preceded or has followed him.'"

"In America all our farms a'most have what we call the rough pastur'—that is, a great rough field of a hundred acres or so near the woods, where we turn in our young cattle, and breedin' mares, and colts, and dry cows, and what not, where they take care of themselves, and the young stock grow up, and the old stock grow fat. *It's a grand outlet that to the farm, that would be overstocked without it.* We could not do without it nohow. *Now, your colonies are a great field for a redundant population, a grand outlet.*"

"What is it, he continued, what is it that 'fetters' the heels of a young country, and hangs like a 'poke' around its neck? what retards the cultivation of its soil, and the improvement of its fisheries?—the high price of labour, I guess. Well, what's a railroad? The substitution of mechanical for human and animal labour on a scale as grand as our great country. Labour is dear in America and cheap in Europe. A railroad, therefore, is comparatively no manner of use to them to what it is to us—it does wonders there, but it works miracles here. There it makes the old man younger, but here it makes a child a giant. To us it is river, bridge, road, and canal, all one. It saves what we han't got to spare, men, horses, carts, vessels, barges, and what's all in all—time."—*Sam Slick.*

"Lord John Russell, sensible, and, I believe, honest man as he is, cannot be styled a model in oratory. Sir George Grey is probably the best speaker among the Whig chiefs in the House of Commons; but he speaks too fast, and, though clear and elegant, he wants vigour, I think, and force. My favourite, Palmerston, admirable as he is in matter, occasionally halts; and impediments in oratory are very tormenting both to the speaker and the audience. Roebuck and Disraeli, in their several styles, are the best speakers now in the House of Commons. They have a *genius* for speaking, never want words, and feel themselves, and make their hearers feel most keenly, what they utter. Shiel is vigorous, Irish, figurative, and often happy; but he is a model for nobody, and must be permitted to shriek in his own wild and peculiar manner, without disciple and without follower. . . . . Lord Stanley's fine tactician tones and sparkling lively style are to me, as portions of his oratory, very attractive. If you dare not imitate

Brougham, study, then, some of the best parts of Stanley, add to these some of the strong sense and gravity in argument of Lord Grey, and some of the flowing periods of Lord Carlisle—without, of course, his ponderous, measured intonation—and you may find a recipe that may gratify your taste."—*A Career in the Commons.*

"The law of partnership in England and Scotland is briefly this—that any one receiving even the smallest portion of profit in a business is deemed to be a partner, and is liable to the last farthing of his fortune to make good the losses of the concern. The only restriction on this broad liability is in the case of societies specially established by act of parliament, or by royal letters patent; but to obtain the benefit of these, or any other form of protective charter, will cost perhaps 1,000*l.*; and, after all, unless guarded by a special legislative enactment, the limitation as to risk may be litigated and found unavailing. In short, the danger of investing in ordinary joint-stock concerns is so great, that comparatively few undertake the hazard; and consequently trading partnerships are confined chiefly to parties who are intimate with each other, and who each take a personal interest in the business. No doubt the unlimited responsibility of partners, irrespective of the extent of their shares, is designed for the protection of creditors; and so far the law has a good meaning. But in protecting the public from one evil, the law unfortunately, by the inflexibility of its provisions, commits a grave injury on society, and stands much in need of amendment.

"According to the French code, there are three kinds of partnership, one of which is that *en commandité*, or *in commendam;* that is, a limited partnership, where the contract is between one or more persons who are general partners—jointly and severally responsible—and one or more other persons, who merely furnish a particular fund or capital stock, and are thence called *commanditaires.* In such concerns the business is carried on under the associated name or firm of the general partners only. The names of the special partners with limited risk do not appear, nor do these partners take any active management; were they to do so, they would assume the responsibility of *general* partners. They may, however, advise as to any course to be pursued, and are at liberty to inspect the books and affairs. From these provisions it will be observed that the special partners, or commanditaires, occupy a position analogous to what is usually termed *sleeping* partners, but without the risk of those persons. In the event of a bankruptcy, the special partners are liable for nothing beyond their investment or share; and they can claim no dividend till all the other creditors of the partnership are satisfied. The law of limited partnership is precisely the same in the state of New York; and in France, as well as in America, partnerships of this

class cannot commence till they are inscribed in a public register, with the names of all the partners, and their several shares and risks. By this registration they are fully known in the trading community, and no one is deceived as to their real character.

"In the report of Mr. Bellenden Ker, presented to parliament in 1837, that gentleman observes—'With respect to the working of the law in France and New York, as far as information has been obtained, it appears to be beneficial; and certainly, as regards the French law, the cases which are reported do not afford evidence that this branch of the law of partnership furnishes any peculiar facilities for committing fraud on creditors. In France, according to the opinions of some well-informed merchants, it is very useful, as affording the means of directing to commercial enterprise much capital which would not be so employed; as affording the means of bringing forward intelligent and skilled persons, who have not capital to enable them to enter into commercial speculation; and as enabling a retiring trader to leave in the business a portion of his gains, and thereby continue the credit of the house to its successors, which the retiring partner might not be inclined to do if his whole fortune were to be liable to the partnership engagements.'

"All parties concur in representing that the United States could not possibly have attained their present prosperity without the law of limited partnership. By one authority we see it stated that—'If there be prosperity in the United States—enterprise—full and profitable investment of capital—steamboats traversing the rivers, and speeding not only along the coasts, but to remote parts—a commercial navy traversing every sea, and sweeping "even to the uttermost parts of the earth"—railways which intersect the entire of that mighty continent—and cities springing up, as it were, in a single night—this has mainly resulted from the aggregation of small means into large amounts by means of limited partnership.'"—*Chambers's Edinburgh Journal.*

5. In reasoning from analogy or comparison, if the case to be proved appears to be stronger even than the case with which it is compared, the analogy is called by scholastic logicians, an *argumentum à fortiori*, that is, "a stronger argument." This kind of argument is often denoted in Scripture by the words, "How," "how much more," or "how much rather." The following are examples:—

"And David answered Rechab and Baanah his brother, the sons of Rimmon the Beerothite, and said unto them, As the Lord

liveth, who hath redeemed my soul out of all adversity, when one told me, saying, Behold, Saul is dead, thinking to have brought good tidings, I took hold of him, and slew him in Ziklag, who thought that I would have given him a reward for his tidings: *how much more*, when wicked men have slain a righteous person in his own house upon his bed? shall I not therefore now require his blood of your hand, and take you away from the earth?"—2 *Sam.* iv. 9—11.

"And why take ye thought for raiment? Consider the lilies of the field, how they grow; they toil not, neither do they spin: and yet I say unto you, That even Solomon in all his glory was not arrayed like one of these. Wherefore, if God so clothe the grass of the field, which to-day is, and to-morrow is cast into the oven, shall he not *much more* clothe you, O ye of little faith?"—*Matt.* vi. 28—30.

"If ye then, being evil, know how to give good gifts unto your children, *how much more* shall your Father which is in heaven give good things to them that ask him?"—*Matt.* vii. 11.

"Woe unto you, ye blind guides, which say, Whosoever shall swear by the temple, it is nothing; but whosoever shall swear by the gold of the temple, he is a debtor! Ye fools and blind: for whether is greater, the gold, or the temple that sanctifieth the gold? And, Whosoever shall swear by the altar, it is nothing; but whosoever sweareth by the gift that is upon it, he is guilty. Ye fools and blind: for whether is greater, the gift, or the altar that sanctifieth the gift?"—*Matt.* xxiii. 16—19.

"But will God in very deed dwell with men on the earth? Behold, heaven and the heaven of heavens cannot contain thee; *how much less* this house which I have built!"—2 *Chron.* vi. 18.

"He that spared not his own Son, but delivered him up for us all, how shall he not with him also freely give us all things?"—*Rom.* viii. 32.

"Therefore we ought to give the more earnest heed to the things which we have heard, lest at any time we should let them slip. For if the word spoken by angels was stedfast, and every transgression and disobedience received a just recompence of reward; *how* shall we escape, if we neglect so great salvation; which at the first began to be spoken by the Lord?"—*Heb.* ii. 1—3.

An *à fortiori* argument has been employed on both sides the question respecting the marriage with the sister of a deceased wife.

"It is contended that in the word of God marriages are prohibited within degrees of affinity more remote than a deceased wife's sister, and that as mathematically the greater includes the less, so morally the marriage in question is prohibited by the forbidding of other and more remote alliances.

"Now, we quite admit the *fact*, that there are more remote degrees disallowed, than the one that, on the hypothesis of the law sanctioning marriage with a wife's sister, is permitted. We admit *the fact*, but we differ in the consequence deduced from it. Our opponents say, 'that if marriage with the more remote relative is unlawful on the score of nearness of kin, how is the conclusion to be resisted, that, *à fortiori*, marriage with the less remote is unlawful also?'

"Dr. Symington, in spite of his apparently clenching inference, has, *on his own principles*, a difficulty to meet *the same as ours*. Cousins are more nearly related than any affinity-relation can be, for they are *literally* from the same 'one flesh:'—and they are certainly more nearly related than a man can be to *his wife's grand-daughter*. Now, apply Dr. Symington's argument. 'If marriage with the *more remote* is unlawful, on the score of nearness of kin, (where there is really no blood,) how is the conclusion to be resisted, that, *à fortiori*, marriage with the *less remote* is unlawful, (where there *is* blood)?'"—*Rev. T. Binney's Argument on the Levitical Marriage Law.*

The text, Matt. xix. 9—"And I say unto you, Whosoever shall put away his wife, except it be for fornication, and shall marry another, committeth adultery: and whoso marrieth her which is put away doth commit adultery"—contains an *à fortiori* argument against polygamy. For if it is criminal for a man to put away his wife and marry another, then, *à fortiori*, it must be criminal for him to marry another without putting the first away.

The following is a comparison of this kind, drawn between the window-tax and the taxes on knowledge, as they are called—the taxes on paper, newspapers, and advertisements:—

"*Tax on Knowledge.* Thou slumbering Minister, attend to us!
Nor let the cries of others stop thine ears
Against admittance from our potent voice.
The Window Tax, I know, has been with thee—
Talked of the light of day—'tis plausible!
But, oh! the light of knowledge must surpass
All other lights in brilliance. Window light

Freshens the body, but the light of knowledge
Gives life and vigour to the mind and soul.
'Tis well to ope the windows of a house,
But better by a thousand-fold, at least,
To ope the windows of the human frame,
Let in a flood of light, and warmth, and air
Upon the higher faculties of man.
Reflect on what I urge—Farewell—farewell!"

Punch, Feb. 8, 1851.

The following *à fortiori* argument is used by the Hon. Joshua R. Giddings, Member of Congress for the state of Ohio, with reference to the Fugitive Slave Bill. This bill requires the inhabitants of the free states to assist in apprehending the fugitive slaves, and delivering them back to the state from which they had escaped :—

"Thus, fellow-citizens, you and I are liable at any hour, to be called upon to pursue the flying bondman as he hastens towards a land of freedom. We have become a nation of slave-hunters, and slave-catchers.

"The man who shall seize a slave upon the African coast, is by our law consigned to the gallows, and deemed unworthy of an existence among civilized, and even barbarous people; but *how much greater* must be the guilt of him who seizes the enlightened and intelligent Christian, one who holds the same religion, and trusts in the same salvation as himself, and riveting the cold iron upon his trembling limbs, sends him back to bondage and suffering.

"We know that the benighted African is unconscious of his rights, and incapable of appreciating his degradation; yet we hang the man who arrests and consigns him to slavery. This we regard as just: but what penalty can be regarded as commensurate with the crime of seizing upon our fellow-man whose mind has been enlightened, who knows the rights with which God has endowed him, who comprehends the crime committed against him, and of sending him back to a land of chains, and whips, and suffering? In my opinion, such crime far transcends that of the ordinary pirate: Indeed, I think the thief or the pirate far more entitled to our friendship, than he who under such circumstances will lend himself to the commission of the crimes which the law requires us to perpetrate."

Sometimes clergymen take a text referring to temporal affairs and apply it to such as are spiritual, contending that the duty enforced in reference to things of this life

is still more important when applied to the life to come. Thus, from the text, "Be thou diligent to know the state of thy flocks, and look well to thy herds," the preacher remarked, that if diligence be a duty in reference to our temporal affairs, *à fortiori*, it was a duty still more imperative in regard to our eternal interests. And the Apostle Paul uses a similar argument in 1 Corinthians ix. 11, in reference to the support of the Christian ministry:—"If we have sown unto you spiritual things, is it a great thing if we shall reap your carnal things?"

6. Sometimes we compare two things together, not so much to discover wherein they agree, but wherein they differ; and we rest our argument upon the contrast. To prove that the appointment of an archbishop and twelve bishops of England by the Pope constitutes "a new spiritual claim," the Rev. T. Binney shows the differences which are thus introduced:—

"Previous to the recent act of the Papacy, the Romanists, it is admitted, had their bishops and districts; but the whole arrangement contemplated themselves alone. The bishops took their titles from *places* in other lands—old, extinct sees; they had not, properly speaking, any *territorial* relation to England, but only a spiritual relation to a certain portion of the *people*. Dr. Wiseman, for instance, was Bishop *of* Melipotamus. To that diocese, wherever it is, he would be regarded, at Rome, as having a territorial relation, and an episcopal relation to all its inhabitants, if there are any. In England, however, he was only on a spiritual mission to the members of his own Church, and pretended to no ecclesiastical relation to any one else. But now that the Popish bishops take the names of the towns and cities of England, and England itself is parcelled out by the Pope into actual dioceses to which he appoints, there is in this new arrangement (whatever may be said to the contrary) an implied claim to spiritual interest in Englishmen as such—an interest not springing merely from their benevolence for the salvation of schismatics (which we are quite willing his Holiness should feel), but one arising out of a territorial relation to the British soil, and a consequent ecclesiastical relation to the British Isles."

The following contrast is part of an appeal on behalf of aged governesses:—

"We cannot give them the best blessings that are conveyed in that almost sacred word; we cannot surround them with the family ties and the sweet sympathies of home; but we CAN take

them from a cheerless lodging, and the anxieties of daily privation, and the harshness of petty creditors—the half-spread table—the *not half*-warmed room—the lonely hours of increasing helplessness; and give them warmth, and food, and care, and kindness—freedom from the cruel anxiety of rent—a hand to help, a voice to cheer—the blessed certainty that their weakness will be tended—their infirmities cared for—their last days allowed to pass undisturbed by the harassing anxieties of poverty."—*Institution for Aged Governesses.*

Some have contended for universal suffrage upon the ground that it exists in America. An opponent of this sentiment shows wherein America differs from England in this respect:—

"The United States are, singularly enough, taken by both the advocates and the opponents of universal suffrage as a conclusive example for and against the same system; and it is not the least curious part of the paradox that the principle cause of the facts which are pleaded and exaggerated by both parties lies out of the sphere of politics altogether. It is to the prodigious amount of fertile soil, compared with the smallness of the population, and to the consequent cheapness of land and dearness of labour, that North America owes, in a great measure, the prosperity, morality, and contentment of her people, and the comparative security of life and property. And it is to the same cause that we should attribute the major part of that spirit of speculation, that rabid thirst for wealth, that inferiority in arts and literature, that absence of refinement, that selfish kimboing, jostling race through life, of which brother Jonathan is sometimes justly, and oftener unjustly, accused: the United States are, and must long remain, a country of material production, with its advantages and its disadvantages. It follows, that the conditions under which complete consistent democracy has been tried on the other side of the Atlantic are so unlike those of Europe, that we cannot infer, with any certainty, from the success of the institutions of the former, that they would succeed on our more crowded shores."—*Christian Times.*

The contrast between Protestant and Catholic states is thus described by Mr. Macaulay:—

"From the time when the barbarians overran the Western Empire, to the time of the revival of letters, the influence of the Church of Rome had been generally favourable to science, to civilization, and to good government. But during the last three centuries, to stunt the growth of the human mind has been her chief object. Throughout Christendom, whatever advance has

been made in knowledge, in freedom, in wealth, and in the arts of life, has been made in spite of her, and has everywhere been in inverse proportion to her power. The loveliest and most fertile provinces of Europe have, under her rule, been sunk in poverty, in political servitude, and in intellectual torpor, while Protestant countries, once proverbial for sterility and barbarism, have been turned by skill and industry into gardens, and can boast of a long list of heroes and statesmen, philosophers and poets. Whoever, knowing what Italy and Scotland naturally are, and what four hundred years ago they actually were, shall now compare the country round Rome with the country round Edinburgh, will be able to form some judgment as to the tendency of Papal domination. The descent of Spain, once the first among monarchies, to the lowest depths of degradation; the elevation of Holland, in spite of many natural disadvantages, to a position such as no commonwealth so small has ever reached, teach the same lesson. Whoever passes, in Germany, from a Roman Catholic to a Protestant principality; in Switzerland from a Roman Catholic to a Protestant canton; in Ireland from a Roman Catholic to a Protestant county, finds that he has passed from a lower to a higher grade of civilization. On the other side of the Atlantic the same law prevails. The Protestants of the United States have left far behind them the Roman Catholics of Mexico, Peru, and Brazil. The Roman Catholics of Canada remain inert while the whole continent round them is in a ferment with Protestant activity and enterprise."—*History of England.*

The principle of contrast is much used in theology:—

"CONTRAST WORDS AND ACTIONS.—This is, as our author presently expresses it, one of the finest topics of illustration. There is no end of the utility of it in theology. It illustrates revelation by contrasting it with all systems of natural religion. 'Never man spake like this man.' It illustrates Christianity by placing it opposite to Judaism. 'Ye are not come to Mount Sinai: but ye are come to Mount Zion.' It distinguisheth true ministers of Christ from pretenders. 'We are not as many who corrupt the word of God: but we speak as of God.' It displays the beauty of a true church by comparing it with the deformity of false religion. Of Mohammedism, Popery, and all political religions, it may safely be asked, 'What agreement hath the temple of God with idols?' It is of excellent use in preaching the law, by contrasting what men are with what they ought to be. It is excellently adapted to comfort, by comparing the wisdom of Providence with the folly of him who complains of it; the sufficiency of pardoning mercy with the abundance of a sinner's unworthiness; the pleasures of piety with the amusements of sin; the privileges of a saint with the licentiousness of

a sinner; the aids of the Holy Spirit with the efforts of the tempter; the joys beyond death with the agonies of dying. It is useful to recover a backslider, by comparing his present state with a former state. 'Did I appear to the house of thy father?' &c. In these, and in a thousand other cases, contrast is lovely beyond conception, and Scripture abounds with it. Contrasts may be taken from *person:* 'What God hath cleansed, call not *thou* common,'—from *place:* 'Pass over the isles, send unto Kedar, and see, hath a nation changed their idols: but my people [in Judea] have changed their glory;'—from *time, relation,* &c. &c."—*Robinson's Notes to Claude.*

The relation of contrast gives point to public address. Writers and speakers often commence by avowing principles and feelings different from those likely to be ascribed to them from the cause which they advocate. A barrister, who opens a case of libel against a newspaper, begins by avowing an attachment to the liberty of the press; the writer of a leading article in favour of Puseyism will commence by declaring his strong regard for the principles of the Reformation; and if a statesman intends to be particularly cloudy in the expression of his opinions, he will commence with, "I shall now speak with the utmost frankness." To disarm prejudice is a part of oratory. We once read a French work, entitled "Les Biensèances Oratoires," in which cases of this kind are cited from Cicero and other ancient orators. Nor are instances wanting in the New Testament, in which orators commenced by attempts to conciliate the goodwill of those they addressed. We might cite St. Paul's address to the Athenians, his address to Agrippa, and his address to Festus; and on the other side, the address to Felix by Tertullian.

7. Having now taken a view of analogy, comparison, and contrast, we will conclude this section by taking a view of fallacious analogies.

Analogies are of two kinds. They may denote a resemblance between two things themselves, or merely a resemblance between the circumstances in which they are placed. Thus, when Sydney Smith argues that dispositions are hereditary, from the analogy between men and animals, the resemblance is between the things themselves. But when he tells us we ought not to decry the science of

Moral Philosophy, inasmuch as several other sciences are liable to the same objections, the analogy is between the circumstances in which these sciences are placed. We are thus liable to make two mistakes. When we find there is an analogy between the things themselves, we may erroneously infer there is an analogy in their circumstances. Or when we find an analogy in their circumstances, we may infer there is an analogy in the things themselves.

The first error is exhibited very often in the analogies drawn between men and animals. There is, no doubt, a resemblance between reason and instinct. Hence some have inferred that there is an analogy between men and animals in their rights with reference to each other. Paley and others have contended on this ground that men have no right to kill animals for food. We think they are incorrect in their analogies.

"The reasons alleged in vindication of this practice, are the following: that the several species of brutes being created to prey upon one another, affords a kind of analogy to prove that the human species were intended to feed upon them; that, if let alone, they would overrun the earth, and exclude mankind from the occupation of it; that they are requited for what they suffer at our hands, by our care and protection.

"Upon which reasons I would observe, that *the analogy* contended for is extremely lame; since brutes have no power to support life by any other means, and since we have; for the whole human species might subsist entirely upon fruit, pulse, herbs, and roots, as many tribes of Hindoos actually do. The two other reasons may be valid reasons as far as they go; for, no doubt, if man had been supported entirely by vegetable food, a great part of those animals which die to furnish his table, would never have lived; but they by no means justify our right over the lives of brutes to the extent in which we exercise it. What danger is there, for instance, of fish interfering with us, in the use of their element? or what do *we* contribute to their support or preservation?"—*Paley's Moral Philosophy.*

In his speech at the Peace Congress held in Frankfort, Mr. Cobden contended for the principle of arbitration between nations, upon the ground of the analogy between nations and individuals: "It is done in private life continually. Scores and hundreds of British Acts of Parliament have been passed, requiring that such disputes should

be settled by arbitration: and the principle you find good for individuals you will find good for nations." Here there is a want of analogy in the circumstances of the parties. If two individuals in a state refer their dispute to arbitration, the law will compel them to abide by the decision of the arbitrator. But in the case of nations, if either party chooses to dispute the decision of the arbitrator, who is to enforce obedience, and by what means, except by war?

So Lord John Russell denies the soundness of the analogies in the circumstances of the following cases:—

"It is impossible to confound the recent measures of the Pope with the division of Scotland into dioceses by the Episcopal Church, or the arrangement of districts in England by the Wesleyan Conference. There is an assumption of power in all the documents which have come from Rome—a pretension to supremacy over the realm of England, and a claim to sole and undivided sway, which is inconsistent with the Queen's supremacy, with the rights of our bishops and clergy, and with the spiritual independence of the nation, as asserted even in Roman Catholic times."—*Letter to the Bishop of Durham.*

The second error is when, from an analogy in circumstances, we infer an analogy in the things themselves. In the following quotation Sydney Smith defends the charge against moral philosophy (*i.e.* mental philosophy), upon the ground of its analogy in point of circumstances with several other sciences. Were we to infer from this that there is a resemblance between the sciences themselves, our reasoning would be fallacious:—

"*Moral Philosophy not chargeable with the Errors of Moral Philosophers.*—A great deal of unpopularity has been incurred by this science from the extravagances or absurdities of those who have engaged in it. When the mass of mankind hear that all thought is explained by vibrations and vibratiuncles of the brain, —that there is no such thing as a material world,—that what mankind consider as their arms, and legs, are not arms and legs, but *ideas* accompanied with the notion of *outness*,—that we have not only no bodies, but no minds;—that we are nothing, in short, but currents of reflection and sensation; all this, I admit, is well calculated to approximate, in the public mind, the ideas of lunacy and intellectual philosophy. But if it be fair to argue against a science, from the bad method in which it is prosecuted, such a mode of reasoning ought to have influenced mankind centuries

ago to have abandoned all the branches of physics, as utterly hopeless. I have surely a right to rake up the mouldy errors of all the other sciences;—to reproach astronomy with its vortices,—chemistry with its philosopher's stone,—history with its fables,—law with its cruelty and ignorance;—and if I were to open this battery against medicine, I do not know where I should stop. Zinzis Khan, when he was most crimsoned with blood, never slaughtered the human race as they have been slaughtered by rash and erroneous theories of medicine."—*Moral Philosophy.*

Archbishop Whately defends logic by the same mode of reasoning; and when he confines his analogies merely to the *circumstances* in which logic resembles other sciences, his reasoning is generally conclusive. But sometimes he goes beyond this, and finds, or fancies, analogies between the *nature* of logic and that of other sciences to which it bears no resemblance. For example, he finds an analogy between logic and chemistry. I quote Mr. Blakey:—

"In an able work recently published by Archbishop Whately, on the use of the syllogistic theory, the author observes, that 'Logic, which is, as it were, the grammar of reasoning, does not bring forward the regular syllogism as a distinct mode of argumentation, designed to be substituted for any other mode; but as the form to which *all* correct reasoning may be ultimately reduced; and which, consequently, serves the purpose (when we are employing logic as an *art*), of a test to try the validity of any argument; in the same manner as by chemical analysis we develop and submit to a distinct examination the elements of which any compound body is composed, and are thus enabled to detect any latent sophistication and impurity.'

"It appears to me, that the Archbishop has fallen into error regarding the nature and importance of the syllogism, from instituting certain analogies between it and some other departments of knowledge, such as chemistry, grammar, and arithmetic. He compares the analysis of a piece of reasoning, to the chemical analysis of any material substance; he imagines that the logic of syllogisms bears the same relation to general reasoning that grammar does to language; and the technical terms in which the syllogistic process is couched, are viewed as resembling the arbitrary signs affixed to arithmetical quantities. A very slight attention, however, to these analogical illustrations will be sufficient to convince the reader that they are by no means perfect."—*Essay on Logic.*

Archbishop Whately usually argues by analogy. In reading through his book on logic, I have marked with a

pencil thirty-four instances of his arguing by analogy. But the most striking example he has given of this principle of reasoning is in his pamphlet, entitled 'Historic Doubts relative to Napoleon Buonaparte.' The object of this pamphlet was to show that by the same reasoning through which infidel writers have attempted to cast doubts on the New Testament history, they might cast doubts on the history of Napoleon Buonaparte; and as we know the history of Napoleon Buonaparte to be true, although it is exposed to these objections, so the history of the New Testament may be true, although it has been attacked by similar objections. We shall have occasion hereafter to make a few extracts from this singular pamphlet.

Another kind of fallacious reasoning is when the analogy is merely verbal, and there is no real resemblance between the things, or their circumstances. We have given instances of this at page 158, with regard to the words Invasion, Inundation, and Tribute.

All parties apply to the cause they advocate words and epithets that shall awaken associations friendly to their views. In former years they who contended for granting the privilege of sitting in Parliament, and holding high offices under Government, to the Roman Catholics, gave to their cause the name of "Catholic Emancipation," which implied that Catholics were in a state of slavery. We have seen an address from a Home Missionary Society, soliciting subscriptions in favour of "British heathens." And the opponents of the present poor-law dubbed the new almshouses with the name of "Bastiles." But these are mere verbal associations, and prove nothing. Notwithstanding the use of these words, the fact is, that the Roman Catholics were not slaves; our agricultural population are not heathens; and our union workhouses are not bastiles.

In using the principle of analogy you must be careful that your analogical case is one that is sound, or at least is admitted to be sound by the party you are anxious to convince. Your opponent may, and probably will, deny the analogy between the two cases. This is a fair reply, and brings the argument to a practical discussion. But if your opponent takes a different view from yours of the

parallel case that you adduce, you have been unfortunate in the choice of your analogy. For, instance, suppose you are disputing with a person who contends that a man ought to be allowed to marry the sister of his deceased wife, and you say, "Upon this ground you ought to admit that a woman should be allowed to marry the brother of her deceased husband." He might reply, "So I do; I contend for both." Here your analogy has missed fire; and the ground of controversy must be changed. But if your opponent denies the latter case, but contends for the former, then your argumentation will naturally take the form of analogy.

I shall conclude this section by noticing a very ingenious argument, drawn from the doctrine of analogy. In reasoning from analogy, we usually compare good things with good things, and evil things with evil things. Hence Mr. Aiken considers that the analogies drawn in the New Testament between a Christian and a soldier, are a proof of the innocency of war. He has put this argument very forcibly in the following words:—

"It appears, on the grounds already stated, that reason and the natural law of self-preservation, and our duty to ourselves, relations, friends, and countrymen, also that the Divine command and permission to the Jews, all prove that war may be necessary and just; and such a war is not expressly prohibited by the Christian religion. On the contrary, there are frequent allusions to war in the New Testament, in which no censure is implied or expressed. The trumpet, the weapons, the armour of war, are often employed as images to illustrate the Christian warfare. Here the analogy is, that the Christian is a spiritual warrior, in a good cause, against an evil adversary. Thus the apostle Paul speaks of Epaphroditus and Archippus as his *fellow-soldiers*. If war were only and absolutely criminal, the analogy would be unsuitable. How could the Christian apostle have addressed, in a good sense, Epaphroditus my fellow-robber, and Archippus my fellow-murderer? It is at least remarkable, that although the Saviour drove the money-changers and sellers of doves from the temple, he never found fault with soldiers for their occupation, but commended the Centurion's faith."—*Aiken on War.*

SECTION III.

REASONING FROM PARABLES, FABLES, AND PROVERBS.

We take the following explanation of the word parable from Dr. Black's "Student's Manual." "Para-ble, from *para*, side by side, and *ballo*, I put. Thus parable means a similitude, or one thing compared to another. It is usually employed to designate a fable or allegorical instruction, founded on something real or apparent in nature, or history, from which a moral is drawn, by comparing it with something in which the people are more immediately concerned."

The word parable is applied in the New Testament to four different kinds of literary compositions. These are tales, comparisons, parables strictly so called, *i.e.* allegories, and fables. We will give an example of each.

The following is a tale:—

"And he spake a parable unto them, saying, The ground of a certain rich man brought forth plentifully: And he thought within himself, saying, What shall I do, because I have no room where to bestow my fruits? And he said, This will I do: I will pull down my barns, and build greater; and there will I bestow all my fruits and my goods. And I will say to my soul, Soul, thou hast much goods laid up for many years; take thine ease, eat, drink, and be merry. But God said unto him, Thou fool, this night thy soul shall be required of thee: then whose shall those things be, which thou hast provided? So is he that layeth up treasure for himself, and is not rich toward God."—*Luke* xii. 16—21.

A TALE differs from a parable strictly so called, in having no reference beyond itself. The above tale illustrates the futility and uncertainty of riches, but it has no allegorical meaning. It is not employed as a similitude or comparison, to illustrate anything else. The same observation may be applied to the parables, as they are called, of the rich man and Lazarus (Luke xvi. 19—31); the pharisee and publican (Luke xviii. 9—14); the unprofitable servant

(Luke xix. 12—24); and the unfeeling servant, (Matt. xviii. 23—34); which, viewed as literary compositions, are, strictly speaking, not parables but tales.

The mode of reasoning from tales is the same as reasoning from examples. Tales are records of events that have occurred, or are so probable, that they might have occurred. The lessons drawn from these tales are the general principles which the facts tend to prove. It is a mode of reasoning by induction. We have discussed this subject in the first section of this part of our work.

The following is a comparison:—

"Another parable put he forth unto them, saying, The kingdom of heaven is like to a grain of mustard-seed, which a man took, and sowed in his field: Which indeed is the least of all seeds: but when it is grown, it is the greatest among herbs, and becometh a tree, so that the birds of the air come and lodge in the branches thereof."—*Matt.* xiii. 31, 32.

A COMPARISON differs from a tale in that it is employed to illustrate something beyond itself. It differs from a parable in that the illustration is confined generally to one point. In the above example, the comparison between the illustration and the thing illustrated, is confined to one quality, that of rapid and extensive increase. There is no general resemblance in other respects between the two things compared. An attempt to discover such resemblances would be ridiculous. To the same class of compositions belong, the two foundations (Matt. vii. 24—26); the leaven hid in the meal (Matt. xiii. 33); the treasure hid in a field (Matt. xiii. 44); the merchant seeking goodly pearls (Matt. xiii. 45, 46); the net cast into the sea (Matt. xiii. 47, 48); the fig-tree (Luke xxi. 29); and several others.

Of comparison as a principle of reasoning we have already treated. Here comparison is brought before us in the way of metaphor. In this point of view it can never amount to proof. But, nevertheless, its consideration is fairly within the province of logic. One part of our duty as logicians is to state clearly the propositions we intend to prove. Metaphorical comparisons are of great use in enabling us to make this clear statement. Half the disputes that exist among men arise from their misunder-

standing one another. We should endeavour to acquire the art of stating clearly and vividly what it is that we mean. And when we have done this, we shall in most cases have obviated the necessity for any further controversy.

The following is a parable in the strict sense of the word:—

"Hearken; Behold, there went out a sower to sow: And it came to pass, as he sowed, some fell by the way-side, and the fowls of the air came and devoured it up. And some fell on stony ground, where it had not much earth; and immediately it sprang up, because it had no depth of earth: But when the sun was up, it was scorched; and because it had no root, it withered away. And some fell among thorns, and the thorns grew up and choked it, and it yielded no fruit. And other fell on good ground, and did yield fruit that sprang up and increased, and brought forth, some thirty, and some sixty, and some an hundred."—*Mark* iv. 3—8.

The PARABLE strictly so called is an allegory. It is employed to illustrate something that seems at first to have no connexion with it, and the machinery of the composition must correspond with the several parts of the matter to be illustrated. The following explanation of the above parable will exemplify this in a very striking manner:—

"The sower soweth the word. And these are they by the way-side, where the word is sown; but when they have heard, Satan cometh immediately, and taketh away the word that was sown in their hearts. And these are they likewise which are sown on stony ground; who, when they have heard the word, immediately receive it with gladness; And have no root in themselves, and so endure but for a time: afterward, when affliction or persecution ariseth for the word's sake, immediately they are offended. And these are they which are sown among thorns; such as hear the word, And the cares of this world, and the deceitfulness of riches, and the lusts of other things entering in, choke the word, and it becometh unfruitful. And these are they which are sown on good ground; such as hear the word, and receive it, and bring forth fruit, some thirty-fold, some sixty, and some an hundred."—*Mark* iv. 14—20.

To this class of compositions belong the parable of the tares (Matt. xiii. 24—30); the day labourers (Matt. xx. 1—15); the nuptial entertainment (Matt. xxii. 1—13); the

ten virgins (Matt. xxv. 1—12); the faithless husbandmen (Mark, xii. 1—9); and several others. There are also many examples of this kind of composition in the Old Testament. Such are the royal bramble (Judges ix. 8—15); the ewe lamb (2 Sam. xii. 1—7); the fruitless vineyard (Isaiah v. 1—6); the eagles and the vine tree (Ezekiel xvii. 3—8). In minuteness of illustration the parables have an advantage over comparisons. But the application of minute portions of the parable should not be strained. I have heard of a divine, who, in explaining the parable of the good Samaritan, stated that the "two pence" denoted the Old and the New Testament.

Parables, like comparisons, are not proofs. They are, however, vivid illustrations; and the more minute the particulars, the stronger is the illustration. There is, of course, always an analogy between the illustration and the matter to be illustrated. But we must distinguish between a logical and a metaphorical analogy. For instance, the analogy between an animal who had fallen into a pit, and a man who was lame, was a logical analogy, and it was clear that if one might be relieved on the sabbath-day, so might the other. But the analogy between the kingdom of heaven and a grain of mustard seed, was a metaphorical analogy, and the rapid increase of the mustard seed was no proof of the future rapid spread of christianity, though it was a vivid representation of it.

I may state to you, that sometimes the same composition may be either a tale, a comparison, a fable, or a parable, according to the manner in which it is viewed. Thus, the good Samaritan, if viewed as an answer to the question, Who is my neighbour? and as inculcating the exercise of kindness and benevolence, is a tale. But if the condition of the man who fell among thieves is considered as representing the moral state of mankind, and the good Samaritan as representing the Saviour of the world, (and divines often take this view,) then it is a parable. So a comparison becomes a parable when we can trace more than one or two points of resemblance. The fable of the rebellion of the members against the stomach, when related as a representation of the rebellion of the Roman citizens against the senate, is more properly a parable.

The following letter from a young tradesman is a parable:—

"SIR,—In reply to your complaints, allow me to tell you a story. Once on a time, two persons were walking on the sea-shore, when one of them picked up a valuable article which had been washed in by the tide. His companion cried, 'Half!' The finder was annoyed at this, and, to prevent his companion having the half, he threw the article back into the sea. You have for many years carried on a profitable trade in this town. The increasing population led me to suppose there might be room for me. I had no wish to undersell you; I wished only to share your profits. To prevent my getting any portion of these profits, you now sell your goods at a price that yields no profit to yourself."

The dreams and visions which are recorded in Scripture may be regarded as comparisons or parables, and the interpretations were the facts they were designed to prefigure or illustrate. The soldier's dream (Judges vii. 13—15) may be regarded as a comparison, and St. Peter's vision (Acts xi. 4—8) as a parable.

WE NOW PROCEED TO FABLES.

We need hardly observe that we do not use the word fable in any disreputable sense, as denoting falsehood, but merely as the name of a certain kind of literary composition.

The following is a fable:—

"And he spake a parable unto them to this end, that men ought always to pray, and not to faint: saying, There was in a city a judge, which feared not God, neither regarded man: and there was a widow in that city; and she came unto him, saying, Avenge me of mine adversary. And he would not for a while: but afterward he said within himself, Though I fear not God, nor regard man; yet, because this widow troubleth me, I will avenge her, lest by her continual coming she weary me."—*Luke* xviii. 1—5.

The fable is a composition designed to illustrate a *proposition*, which is called the *moral* of the fable. It is not necessary that the machinery of the fable should bear any resemblance to any moral process to which the proposition may be applied. Herein it differs from the parable. The machinery of the parable, or allegory, must correspond with the moral processes it is intended to

illustrate. The machinery of the fable represents nothing. It is required only that the result shall illustrate a proposition, and this proposition must seem to flow from the plot of the fable. In the fable we have quoted, the proposition to be proved or illustrated, is the advantage of perseverance in prayer. But there is no correspondence between the machinery of the fable and the parties to whom reference is made. In fact, the fable derives no small portion of its force from this want of resemblance. It amounts to an *à fortiori* argument. The reasoning is thus: if an unjust judge is induced by importunity to grant a request, how much rather shall the Judge in heaven grant the requests of his servants. This is the application in the subsequent verses: "And shall not God avenge his own elect, which cry day and night unto him, though he bear long with them? I tell you that he will avenge them speedily." The same lesson is taught by the fable of the midnight visitor, Luke xi. 5—8.

Fables occupied in ancient times a more honourable station in the estimation of mankind than they do at present. They are now employed chiefly as the means of imparting instruction to children, or as the profitable amusement of a leisure hour. In former days, the construction of fables was the serious employment of statesmen and philosophers. It always ensured to such as were successful a degree of literary eminence, and sometimes even conferred upon them political distinctions. But though we are not now accustomed to consider fables as the most eminent literary productions, they are by no means the least useful. It is from fables that the greater part of mankind derive their first lessons in moral science, at a time when their minds are incapable of abstract reflection, and when no other mode of instruction would be either so entertaining or so efficacious. The knowledge thus acquired becomes interwoven with the earliest recollections of the mind, and often regulates the conduct in maturer years. The design of fable is to place some important truth in a striking point of view. The proposition we wish to exhibit appears to flow from the plot of the fable, and thus makes deeper impression on the mind than if it had been expressed in literal terms. This truth

is commonly a moral one, and hence it is called the moral of the fable; but it is not necessarily connected with ethics, for it may be connected with politics, or with the ordinary affairs of life. The subject of a fable should not be a truth so obvious that it could not have escaped the most ordinary observation. It would be ridiculous to invent a fable to show that every man is subject to death. But the observation, that, although in our distress we may sometimes call out for death, yet that when he arrives we receive him with reluctance, may properly become the subject of a fable, and it has been well illustrated in the story of the old man and his bundle of sticks.

A fable is different from an example. Upon the relative merits of fables and examples, Aristotle makes the following remarks: "The occasion wherein fables are more in point, and employed with the greatest success, is in popular addresses, and in debates upon great questions. They have this advantage over example, that it is difficult to find in history circumstances perfectly relevant to what we would wish to prove; whereas a fable is easily invented; and, in order to this, nothing more is necessary than to draw a parable, which any man may do who knows in what resemblance consists, a thing by no means difficult to the least proficient in philosophy."

"Example, however, surpasses fable in this respect, that its proofs, which are founded upon the truth of history, and the decided allegation of events, are of much greater effect in deliberation, and more appropriate to persuasive oratory. This happens on account of the great resemblance between all occurrences, inasmuch as it may be said that the past is commonly a presage of the future; and that nothing almost is done now-a-days which was not formerly done."

The German fabulist, Lessing, controverts this opinion; but here we think that Aristotle is right. Let us suppose that in the senate of our land a measure is introduced which involves the question, whether standing armies are unfriendly to liberty. Let a speaker, who wished to prove the affirmative of this question, adduce the fable cited by the author, of the horse, who allowed the man to

get on his back, that he might be revenged on the deer. Let another speaker attempt to prove the same proposition from historical examples—let him adduce the numerous instances in which despotic and tyrannical governments have been supported by means of standing armies—let him refer to the times of Julius Cæsar, of Cromwell, and of Napoleon—let him do this, and then we will ask, Which speaker is the more likely to carry conviction to the mind? In fact, the evidence derived from fables, and particularly from fables in which animals are introduced, never can amount to proof. How easily, for instance, might the fable we have mentioned, excellent as it is, be overturned: for if the horse were a rational animal, as the fable supposes him to be, could he not easily throw the man from his back? and hence, might not an opponent contend, that the citizens, being rational beings, might with equal ease throw off a military government as soon as they found it oppressive? Facts, however, are stubborn things, and their testimony is not so easily refuted.

The following examples of fables are taken from Lessing. Fable the twelfth exposes those who take credit to themselves for abstaining from vices they cannot practice:—

"The Sick Wolf.—The wolf being at the point of death, cast a retrospective glance on his past life. 'I am certainly a sinner,' he plaintively observed, 'but, I trust, not one of the greatest. I have doubtless committed evil; but I have also done much good. I remember that once, when a lamb, which had strayed from the flock, came so near me, I might have devoured it with the greatest ease; I forebore to do so. About the same time, I listened to the abuse of an angry sheep with the most edifying indifference, although no watch-dog was to be feared.' 'To all this I can bear witness,' said the fox, who was assisting his ghostly preparations: 'I recollect all the particulars. It was just at the time you suffered so much from the bone in your throat.'"

To deny the excellencies of a man while he lives, and to praise him after he is dead, is a common practice, and is thus exhibited:—

"The Oak Tree.—One stormy night the raging north wind exercised its strength on a lofty oak, which it levelled with the ground, where it lay with many small trees crushed beneath it.

A fox, whose den was not far distant, happened to pass the next morning: 'What a noble tree!' exclaimed he; 'I never thought it so great while standing.'"

The twenty-fifth fable is designed to show that friendship is more permanent between persons who excel in different kinds of merit, than it is between those whose excellence is of the same kind :—

"THE NIGHTINGALE AND THE PEACOCK.—A social nightingale found among the singers of the wood many enviers, but no friends. 'Perhaps I shall find one in another species,' said the nightingale, and flew with confidence to the peacock.

"'Handsome peacock, I exceedingly admire you.' 'And I equally admire you, lovely nightingale,' exclaimed the one to the other. 'Then let us be friends,' continued the latter; 'we shall not be tempted to envy each other, You are as agreeable to the eye as I am to the ear.'"

Eminence in one kind of merit is often associated with deficiency in another :—

"THE NIGHTINGALE AND THE HAWK.—A mellifluous nightingale was one day pounced upon by a hawk. 'As you sing so charmingly,' he exclaimed, 'how deliciously must you taste!'"

No gratitude is due for favours conferred unintentionally :—

"THE OAK-TREE AND THE SWINE.—A greedy swine fed under a lofty oak, on the fruit which plentifully fell from its boughs; and while he cracked one acorn with his teeth, devoured another with his eyes.

"'Ungrateful beast,' exclaimed the oak, 'you feed rapaciously on my fruit, without casting up one grateful look to me!'

"The swine was silent for a moment, and then grunted an answer: 'My grateful look should not be wanting, was I certain that you threw down your acorns for the love of me.'"

The vanity of rank is thus exposed :—

"THE KNIGHT IN CHESS.—Two boys who wished to play at chess, being deficient in a knight, constituted one out of a superfluous pawn, by placing a mark upon it.

"'How?' cried the other knights. 'Keep your place, sir; one step at a time.'

"The boys, who overheard their insolence, exclaimed, 'Silence, it performs exactly the same service as yourselves.'"

If a man claim more merit than is due to him, mankind will give him less than his due :—

"The Peacock and the Crow.—A foolish crow adorned itself with the cast plumage of the peacock, and when it conceived itself sufficiently ornamented, mingled with the brilliant birds of Juno; being quickly recognised, the peacocks, with their sharp bills, soon stripped her of her deceptive apparel.

"'Cease,' the crow at last exclaimed, 'you have now got back all that belongs to you.' But the peacocks, perceiving a few brilliant feathers in the crow's own plumage, answered, 'Be silent, impostor, even these cannot belong to you.'"

The direction of Solomon, "Go to the ant, thou sluggard; consider her ways, and be wise," has often been quoted to reprove slothfulness: it contains also another lesson, which has hitherto been overlooked :—

"The Spirit of Solomon.—An aged man, in order to plough his field and to strew the fruitful seed in the willing bosom of the earth, bore up against the toil of his employment and the heat of the weather. On a sudden, a divine spectre stood before him under the broad shadow of a lime-tree. The old man started:

"'I am Solomon,' said the phantom emphatically. 'What are you doing here, old man?'

"'If you are Solomon,' replied the old man, 'why need you ask? You sent me in my youth to the ant. I attended to its ways, and became industrious, and what I then learned, I am still practising.'

"'You have learned but half the lesson,' returned the shadow. 'Repair once more to the ant, and let it teach you to repose in the winter of your years, and enjoy what you have already gathered.'"

Parables, we have already observed, do not prove, they only illustrate. Indeed, they are rarely used for the purposes of controversy. They serve to explain what was previously obscure, and thus enable the mind to perceive the truths more clearly, and hence to believe them more firmly. Fables are of a more controversial character. Many of them were originally invented for political purposes. Their object is to illustrate a general proposition, which general proposition is applied to the particular case that we wish to demonstrate. In the composition of the fable, we invent a series of supposed facts, which, by a species of induction, are designed to prove, as far as they

go, a general proposition, which is called the moral of the fable. We then take this general proposition, and apply it to any case, or to all the cases to which it will apply. This is deduction. It is a kind of argument that we have classed under the relation of genus and species, and would rank under the first figure of syllogisms in scholastic logic. The design of fables, then, is to teach us general maxims and propositions, which we are to apply as we may have occasion, to practical purposes, in our progress through the world. Hence the propriety of teaching them to children. By this means they acquire, at an early age, lessons of profound wisdom, in an interesting and agreeable manner, which is likely to make a deep impression on the memory.

We shall further explain the mode of reasoning through the application of parables, by an example from the fables of Æsop. In most of these fables we find that actions are attributed to animals. The reason is, that certain animals are supposed to represent certain characters or dispositions. Thus, the lion is the representative of courage and magnanimity; the fox, of cunning; the peacock, of beauty. This, however, is not a necessary feature in the composition of a fable. We have many excellent fables, both ancient and modern, in which no animals are introduced.

The following is a well-known fable, taken from Æsop, with the application of Dr. Croxall :—

"THE WIND AND THE SUN.—A dispute once arose betwixt the north-wind and sun, about the superiority of their power; and they agreed to try their strength upon a traveller, which should be able to get his cloak off first. The north-wind began, and blew a very cold blast, accompanied with a sharp driving shower: but this, and whatever else he could do, instead of making the man quit his cloak, obliged him to gird it about his body as close as possible. Next came the sun, who, breaking out from a thick watery cloud, drove away the cold vapours from the sky, and darted his warm, sultry beams upon the head of the poor weather-beaten traveller. The man growing faint with the heat, and unable to endure it any longer, first throws off his heavy cloak, and then flies for protection to the shade of a neighbouring grove.

"*The Application.*—There is something in the temper of men

so averse to severe and boisterous treatment, that he who endeavours to carry his point that way, instead of prevailing, generally leaves the mind of him, whom he has thus attempted, in a more confirmed and obstinate situation than he found it at first. Bitter words and hard usage freeze the heart into a kind of obduracy, which mild persuasion and gentle language only can dissolve and soften. Persecution has always fixed and rivetted those opinions which it was intended to dispel; and some discerning men have attributed the quick growth of Christianity, in a great measure, to the rough and barbarous reception which its first teachers met with in the world. The same may have been observed of our Reformation: the blood of the martyrs was the manure which produced that great Protestant crop, on which the Church of England has subsisted ever since. Providence, which always makes use of the most natural means to attain its purpose, has thought fit to establish the purest religion by this method: the consideration of which may give a proper check to those who are continually endeavouring to root out errors by that very management which so infallibly fixes and implants all opinions, as well erroneous as orthodox. When an opinion is so violently attacked, it raises an attention in the persecuted party, and gives an alarm to their vanity, by making them think that worth defending and keeping at the hazard of their lives, which, perhaps, otherwise, they would only have admired awhile for the sake of its novelty, and afterwards resigned of their own accord. In short, a fierce, turbulent opposition, like the north-wind, only serves to make a man wrap his notions more closely about him; but we know not what a kind, warm, sunshiny behaviour, rightly applied, would not be able to effect."

The Rev. Samuel Lysons has published some of the fables of Æsop, acccompanied with an evangelical application. The following is his application of the above fable:—

"*Moral.*—In Scripture, religion is frequently compared to a cloak or garment. Job (xxix. 14) says, 'I put on righteousness and it clothed me.' Isaiah (lix. 17) says, 'he was clad with zeal as a cloak.' The rude blasts and storms of affliction and adversity are far less likely to make men throw off their religion, than the sunny warmth of prosperity. We perceive the former to be enemies and are on our guard, we hold closer to our protection; but the latter, coming under the specious guise of friendship, insinuates itself and strips us bare of our religion, and renders us open to the attacks of a thousand other enemies to our souls. We should be most especially on our guard in the sunny days of prosperity, lest our religion get a chill in the groves of worldly pleasure and wanton enjoyment."

In Gay's Fables, the proposition to be illustrated is usually placed at the commencement of the poem. Thus, in the fable of "The Hare and many Friends," the first line is the proposition to be illustrated :—

"Friendship, like love, is but a name."

The fable of "The Peacock, the Turkey, and the Goose," commences thus :—

"In beauty, faults conspicuous grow;
The smallest speck is seen on snow."

And the following verse is the commencement of the fable of "The Cookmaid, the Turnspit, and the Ox :"—

"Consider man in every sphere,
Then tell me is your lot severe.
'Tis murmur, discontent, distrust,
That makes you wretched. God is just."

Sometimes, however, the proposition, or, as we call it, the "moral" of the fable, is placed at the end.

Some years ago Miss Martineau published a series of "Tales" designed to illustrate the principles of Political Economy. These tales were virtually fables, so constructed as to bring out the principles or maxims proposed to be inculcated. Adam Smith taught by examples. He adduced historical facts in support of his principles. More modern writers have taught by fables, or at least, by fictitious representations. They have endeavoured to explain the nature of capital, the principles of foreign trade, or the theory of the currency, by imaginary transactions between tailors and shoemakers, and farmers and bankers. Or, perchance, these dealings are supposed to have taken place between distant towns. Now, these supposed events can never amount to proof. It may be true that the conclusion seems to flow naturally from the assumed transactions. Indeed, a man must be a dolt if he cannot prove his own case when he takes the liberty of inventing his own facts. But we must always distinguish between a proof and an illustration. The first of Miss Martineau's tales was entitled "Life in the Wilds," and described the savage state. The others were representations of the more

advanced stages of society. As illustrations these tales were interesting, as arguments they proved nothing.

WE NOW PROCEED TO PROVERBS.

Disraeli has an article on the Philosophy of Proverbs. He observes that some difficulty has occurred in the definition. I shall assume that you know what is meant by a proverb; and when a thing is well known, definition may do more harm than good. Formal logical definitions of things well known, sometimes lead to verbal quibbling; and after all can seldom be so worded as to include every individual of the species. A lady asked a gentleman the meaning of a *Pun*. He was puzzled to find a definition, but he replied, "Give me a subject, and I will make one." The lady replied, "Well, I give you the queen." He replied, "The queen is no subject." Some one has observed that a proverb should have "sense, shortness, and salt."

Proverbs are often the morals of fables. They are not usually capable of being proved by reasoning. They are proved by observation and experience, and are many of them the results of the experience of ages. But, referring chiefly to morals and manners, they possess only a moral universality, and hence it is often easy to point out some cases in which they are not realized. Thus—"The diligent hand maketh rich;" "Train up a child in the way he should go, and when he is old he will not depart from it," are sound maxims; but cases do sometimes occur in which they will not apply. This is no valid objection to them as rules for our guidance. In human affairs we can have no certain and infallible rule. We must be contented with a high degree of probability. It is the part of true wisdom to submit our conduct to the guidance of this high degree of probability. "To be indecisive and reluctant to act," says Mr. Mill, "because we have not evidence of a perfectly conclusive character to act upon, is a defect sometimes incident to scientific minds, but which, wherever it exists, renders them unfit for practical emergencies. If we would succeed in action, we must judge by indications, which, although they do not generally mislead us, sometimes do, and must make up as far as possible for the incomplete conclusiveness of any one indication, by obtaining others to corroborate it."

The Earl of Carlisle, in the Lecture delivered at the Leeds Mechanics' Institution and Literary Society, on the Poetry of Pope, cited a number of his lines, which are frequently quoted in the sense of proverbs. The following are some of them, but they are not all sound :—

"The feast of reason and the flow of soul.
A little learning is a dangerous thing.
An honest man 's the noblest work of God.
Welcome the coming, speed the parting guest.
To look through Nature up to Nature's God.
Men must be taught as if you taught them not.
True wit is nature to advantage drest.
Just as the twig is bent the tree's inclined.
Fools rush in where angels fear to tread.
Gentle dulness often loves a joke.
Man never is but always to be blest.
What can ennoble sots, or slaves, or cowards?
Alas! not all the blood of all the Howards."

We transcribe the following from the introduction to Fielding's Select Proverbs of all Nations :—

"From the antiquity of proverbs, they may be defined the primitive language of mankind, in which knowledge was preserved prior to the invention of letters. In the early stages of society, its progress is retarded by three causes: the scarcity of words to express ideas; the feebleness of memory, from the absence of intellectual exertion; and the want of a durable character, by which the discoveries of one generation may be retained and transmitted to another. Proverbs are well adapted for removing these first obstacles to improvement: by a figurative expression they supply the place of verbal description; their brevity is an aid to memory; while, by being connected with local circumstances and surrounding objects, they form a visible type, in which passing occurrences and observations may be recorded. Accordingly, we find that all nations have had recourse to aphoristic language, and doubtless it was in this style the first knowledge of the world, its laws, morals, husbandry, and observations on the weather, were preserved.

"It would be an error, however, to suppose that popular adages comprise only the vulgar philosophy of the people, since the highest sources of human intelligence have contributed to the great intellectual reservoir. In the verses of poets, in the classic historians of Greece and Rome, in the sayings of philosophers and great statesmen, in the responses of oracles, the maxims of the Eastern magi and sages, the learning of the Chinese and Hindoos, the writings of the Fathers and Schoolmen, and those of later date, we often detect the germ of those ancient thoughts which now circulate under the humble guise of an old saying. There is scarcely a celebrated name from the days of Hesiod, who has not added to the great mass of aphoristic literature. It is a treasure constantly accumulating; as the world grows older, the proverbial avalanche augments in bulk, till at length it will comprise a brief abstract of the wisdom of all ages, from the beginning to the end of time. To describe proverbs as only the remains of an 'ancient philosophy' is much too limited; they are the fruits of all philosophy, ancient and modern: what was formerly a bright thought, or apposite allusion, consecrated to the learned, becomes, in process of time, the common property of the people. We thus see the generation of proverbs, and how the wisdom of poets and philosophers becomes the every-day wisdom of the populace, divested only of the redundancy of the original."

"England contains a rich mine of proverbial lore, in which we may trace the genius of the people. We are a mixed race, and our character partakes of the compound nature of our descent—its excellence consisting not in one predominant quality, but in the union of several. We have not the rich humour and glowing imagination of the Spaniards, the insidious refinements of the Italians, the selfish prudence of the Scotch, nor the delicacy and gaiety of the French; but we have a sprinkling of all these. What particularly distinguishes our proverbs, is their sterling good sense; which itself is a constellation of moral and intellectual excellence."

"Proverbs formed the encyclopædia of former times, comprising all the existing observations on human nature, natural phenomena, and local history. Men acquired

wisdom, not from books, but oral communication. All the apparatus of the modern system of education—Horn-books, Reading Made Easys, and Pleasing Instructors, were unknown. Children did not learn their alphabet, nor their catechism; but an adult system prevailed, in which grown persons were taught the arts of life—the mysteries of good housekeeping, of economy, longevity, husbandry, and meteorology, in some traditionary maxim, handed down from generation to generation, time out of mind."—*Fielding's Select Proverbs of all Nations.*

Mr. Nicholls, M.A. of Queen's College, Cambridge, has published a work entitled, "The Book of Proverbs Explained and Illustrated from Holy Scripture." He makes the following observations on the Proverbs of Solomon:—

"A proverb, strictly speaking, is a short moral sentence, which means something further than what the words literally imply. It is 'as apples of gold in a net-work of silver,' grave and profound sentiment, the truth of which acquires additional beauty when partially discovered through the veil of elegant fiction and imagery. But most of Solomon's proverbs are rather to be called maxims or sentences. The distinction between a proverb strictly so called, and a maxim, or sentence, may be thus illustrated: When Solomon says, 'Trust in the Lord with all thine heart, and lean not to thine own understanding,' this is no proverb, but a moral sentence. When he says, 'Drink waters out of thine own cistern,' this is a proverb; and it means, meddle not with that which belongs to another."

"Out of the vast treasures of learning left us in this small volume, the best advice is furnished to princes, counsellors, judges, and other public ministers, to all sorts of subjects in their several relations, and in every condition; to make them both pious and politic; to direct them in the choice of their comforts, in the education of their children, in the management of domestic affairs, and in their transactions with other men; in contracting or conducting their friendships, in giving or taking good counsel and reproof, in making or preserving peace, in judging of men, and of the event of their designs. This book bridles the injurious tongue, corrects the wanton eye, and ties the unjust hands in chains. It persecutes sloth, chastises all absurd desires,

teaches prudence, raises men's courage, and represents temperance and chastity after such a fashion, that one cannot but have them in veneration;—and thus is, as Basil says, an universal direction for all men, and for the whole of life. It, moreover, not only gives such universal directions, but enforces attention to them from those motives which can alone secure obedience to them, such as the authority of God (ch. xvi. 6), his exact notice of all men's ways and hearts (ch. v. 21; xv. 11), the rewards which attend righteousness (ch. xi. 18), and the punishments which follow wickedness, by his just appointment, both in this world and the next (ch. xix. 29; xxiii. 17—19; xxvi. 10).—See Lowth's Directions for Reading Holy Scripture, and Bishop Patrick."—*Nicholls' Book of Proverbs.*

After giving a number of excellent rules for the interpretation of proverbs, he considers the sources from whence they are derived. These are:—

1. From geographical circumstances, such as, "Your destruction cometh as a *whirlwind.*" "The mouth of a righteous man is as a *well* of life." "His favour is as *dew* upon the grass," &c. 2. From Natural History: "Go to the *ant*, thou sluggard." "The king's wrath is as the roaring of a *lion.*" "They fly away as an *eagle* toward heaven," &c. 3. The manners and customs of Eastern nations: "She has sent forth her *maidens.*" Invitations to a banquet were given by maidens. "Though hand join in hand, the wicked shall not be unpunished." Engagements or bargains were ratified by joining hands. "As a jewel of gold in a swine's snout, so is a fair woman without discretion." In the East jewels are worn in the nostrils. 4. The Mosaic Law: "Bind them about thy neck" like the precepts of the law. "Better is a dry morsel, and quietness therewith, than a house full of *sacrifices* and strife." "Their *redeemer* (near kinsman) is mighty." 5. Miscellaneous: "He that is of a merry heart hath a continual feast." "The words of a tale-bearer are as wounds." "A soft tongue breaketh the bone," &c.

The mode of illustration adopted by Mr. Nicholls, is to state the proverbs, and then to cite those instances in which the principle has been exemplified in Scripture History. These facts, like an argument from induction,

tend to prove the truth of the proverb. We give the following as an example:—

"*The merciful man doeth good to his own soul.—Prov.* xi. 17.

"Joseph had sorrows of his own (Psalm cv. 18), but he took an interest in those of his fellow-prisoners, the chief butler and the chief baker. (Gen. xl. 6.) This led them to unburden the cause of their sorrow to him; and hence arose the opportunity of interpreting their dreams which ultimately led to his own advancement. (Gen. xli. 9—14.)

"The Kenites; the kindness shown by them to the Israelites was gratefully remembered many hundreds of years after, to the benefit of their descendants. 1 Sam. xv. 6. Eccles. xi. 1.

"David's compassion to the Egyptian slave was the means of his signal success. 1 Sam. xxx. 11—20.

"Jonathan's kindness to David led to his children's preservation. 2 Sam. ix. 7; xxi. 7.

"Job, in seeking mercy for others, found good to himself. He eat good by the fruit of his mouth. (Prov. xiii. 2.) The Lord turned the captivity of Job when he prayed for his friends. Job xlii. 10.

"The centurion, having built the Jews a synagogue, they interceded for him; and his anxiety for the welfare of his sick servant was the means of confirming his own faith in Christ. (Luke vii. 2—10.) Let thy soul love a good servant. Ecclus. vii. 21.

"Cornelius. Acts x. 4. Prov. xii. 14.

"The barbarous people; their mercy to those who had been wrecked on their coast, and the blessing they received. Acts xxviii. 1—10."—*Nicholls' Book of Proverbs.*

Dr. M'Culloch, in his Lectures on the "Literary Characteristics of the Holy Scriptures," has a note on the Book of Proverbs:—

"It ought not to surprise any reflective reader to find a Book of Proverbs in the Old Testament Canon. No form of composition is better adapted than the proverbial to spread and preserve religious and moral truths among a people imperfectly acquainted with letters. Aphoristic sentences—brief but pointed, 'parsimonious of words but prodigal of meaning'—are admirably fitted to arrest attention, and live in the memory. In their combined 'sense, shortness, and salt,' there is a peculiar charm for minds of every order. And when, like the Proverbs of Scripture, they are cast in an antithetical mould, they seldom fail to

'prick sharply and hold firmly.' Such 'words of the wise are as goads, and as nails fastened by the masters of assemblies.'"

"One permanent use of the Book of Proverbs deserves to be particularly noticed, because it has hitherto been overlooked by critics and commentators. I refer to the use and value of this book as a standing witness to the veracity of the Old Testament historians. If I am not mistaken, this collection of national proverbs furnishes a branch of historical evidence substantially the same in kind with that by which the acute and sagacious Paley has demonstrated the truth of the Scripture history of St. Paul. The argument of that master of reasoning is founded on the undesigned coincidences between certain passages in St. Paul's Epistles, and some particulars of the Apostle's life and labours as related by St. Luke in the Acts; and every intelligent reader of his Treatise will admit that he has pointed out and illustrated such a series of minute and undesigned agreements between those two narrations, as can in no way be accounted for but by a supposition of their truth. Similar latent proofs of harmony and verity may, I think, be detected by comparing the allusions in the Book of Proverbs with the Old Testament history. Just as Dr. Paley, by placing the Pauline Epistles and St. Luke's narrative, as it were, in the witness-box, and subjecting them to a searching cross-examination, has elicited from both that kind of testimony which has most weight with judge and jury—coincident testimony so minute and circumstantial as to exclude the suspicion of collusion; so, I apprehend, a critic of competent learning and acuteness might without much difficulty produce from the Book of Proverbs a rich assemblage of most decisive, because undesigned, corroborations of the sacred annals of the Jews."

"Proverbs are, in fact, themselves of the nature of history; for when arranged in the order of their respective dates, they form a continuous record of the prevailing opinions and feelings of a nation. They usually go back to its infancy; they grow with its growth; they vary with its various changes of fortune: and owing their origin and currency to the impressions made on the

national mind by particular events and institutions, they necessarily reflect and retain not a little of the colour and character of these events and institutions."

The mode of reasoning from proverbs, as we have stated at pages 55 and 129, is by the application of a general principle to an individual case, and falls under the class of genus and species. We shall now give a further illustration from Dr. Franklin's Poor Richard's Almanack :—

"It would be thought a hard government that should tax its people one-tenth part of their time to be employed in its service: but idleness taxes many of us much more: sloth, by bringing on diseases, absolutely shortens life. 'Sloth, like rust, consumes faster than labour wears, while the used key is always bright,' as poor Richard says. 'But dost thou love life, then do not squander time, for that is the stuff life is made of,' as poor Richard says. How much more than is necessary do we spend in sleep! forgetting that 'The sleeping fox catches no poultry,' and that 'there will be sleeping enough in the grave,' as poor Richard says."

"But with our industry we must likewise be steady, settled, and careful, and oversee our own affairs with our own eyes, and not trust too much to others, for, as poor Richard says,

"'I never saw an oft removed tree,
Nor yet an oft removed family,
That throve so well as those that settled be.'

"And again, 'Three removes is as bad as a fire;' and again, 'Keep thy shop, and thy shop will keep thee;' and again, 'If you would have your business done, go; if not, send;' and again,

"'He that by the plough would thrive,
Himself must either hold or drive.'

And again, 'The eye of the master will do more work than both his hands;' and again, 'Want of care does us more damage than want of knowledge;' and again, 'Not to oversee workmen, is to leave them your purse open.' Trusting too much to others' care is the ruin of many; for 'In the affairs of this world, men are saved, not by faith, but by the want of it;' but a man's own care is profitable, for 'If you would have a faithful servant, and one that you like, serve yourself. A little neglect may breed great mischief; for want of a nail the shoe was lost; for want of a shoe the horse was lost; and for want of a horse the rider was lost,' being overtaken and slain by the enemy; all for want of a little care about a horse-shoe nail.

"So much for industry, my friends, and attention to one's own

business; but to these we must add frugality, if we would make our industry more certainly successful. A man may, if he knows not how to save as he gets, 'keep his nose all his life to the grindstone, and die not worth a groat at last. A fat kitchen makes a lean will;' and,

"'Many estates are spent in the getting,
Since women for tea forsook spinning and knitting,
And men for punch forsook hewing and splitting.'

'If you would be wealthy, think of saving as well as of getting. The Indies have not made Spain rich, because her out-goes are greater than her in-comes.'"

"This doctrine, my friends, is reason and wisdom; but, after all, do not depend too much upon your own industry, and frugality, and prudence, though excellent things; for they may all be blasted without the blessing of Heaven; and, therefore, ask that blessing humbly, and be not uncharitable to those that at present seem to want it, but comfort and help them. Remember, Job suffered, and was afterwards prosperous.

"And now to conclude, 'Experience keeps a dear school, but fools will learn in no other,' as poor Richard says, and scarce in that; for it is true, 'We may give advice, but we cannot give conduct.' However, remember this, 'They that will not be counselled, cannot be helped;' and further, that, 'If you will not hear reason, she will surely rap your knuckles,' as poor Richard says."

SECTION IV.

REASONING FROM WRITTEN DOCUMENTS.

WRITTEN documents give rise to a vast deal of argumentation. Different meanings are attached to letters, to agreements, to wills, and to many other writings. To decide the questions which are thus raised, we must have recourse to reasoning. Sometimes the authenticity of the document is denied. We have then to prove that it was written by the author whose name it bears; and in the case of wills, we have also to prove that the party was of sound mind when he affixed his signature. At other times, the dispute has reference to the meaning of the documents.

Here we have to show what was the meaning intended by the author of the document. In this, as in the former case, we shall probably be compelled to have recourse to circumstantial evidence. When there is no doubt about either the authenticity or the meaning of the document, the questions raised will have a reference to the character of those cases to which the terms of the document may be applied. For example, the written law prohibits murder. If, then, one man kills another in a duel, is that murder, or only manslaughter? The law prohibits swindling. If, then, a man borrows money, knowing that he cannot repay it, is that swindling, or is it an ordinary debt? The trials that take place in our civil and criminal courts, with a view to ascertain the facts of the case, are not reasonings from written documents. The object is merely to prove the facts. The evidence received is either direct or indirect. Direct evidence is the testimony of witnesses, and here reasoning is employed only in regard to the character and credibility of the witnesses. The other kind of evidence is indirect, or, as it is called, circumstantial. We have explained this kind of evidence in the Section on Conditional Causes, at page 94. When points of law are reserved for the opinions of the judges, or cases are argued *in banco*, the reasonings have a reference to written documents—that is, to the meaning and application of the laws.

"The common law," says Mr. Macculloch, "is a piece of patchwork, like the courts themselves, derived from laws and customs partly Saxon, partly Norman, which from time to time have been altered and modified by statute; but of its origin no record remains. Hence it is called *lex non scripta;* not as being founded on the universal law of reason, but as not being founded on any known acts of the legislature. It rests on the decisions of the judges, registered in the different courts, and preserved among their records. In matters of consequence and nicety, these are always referred to; but for ordinary purposes, reports of the different cases, in which any difficult question arises, are published from time to time. These contain a statement of the facts, a short outline of the arguments made use of by counsel, the cases referred

to, and the grounds on which the court made its decision. In early times—that is, from the reign of Edward I. to the reign of Henry VIII.—these reports were made annually, by officers appointed by the court specially for the purpose, being then termed Year-books. At the present day, they are the work of a private hand, generally a barrister. So voluminous have they become, that an ordinary law library contains from 300 to 400 volumes. The common law may be also, and constantly is, in particular points, altered by acts of parliament, which thenceforth become the law of the land. It of course prevails in the common law courts, with the exception of the copyhold courts, which possess peculiar customs of their own, differing, more or less, from the general common law of the kingdom. Particular customs are also to be met with in certain districts, as the law of gavelkind of Kent, borough English, &c.; but these, though varying from the general custom, are usually considered as forming part of the common law, since, like it, they depend for their authority on usage and tradition only. The courts of equity, in a great measure, adopt the wider principles of universal justice; hence the distinction of law and equity. Like the courts of common law, however, they are now chained down by the precedents of previous decisions, of which records are kept, and reports made, in the same way as at common law. It is only when a new point arises, that a judge is left to decide according to what he may himself think right; and, even in this, he must be guided by existing principles of equity, as established by decisions: this, indeed, is the meaning of his oath to decide according to law. But though the courts of equity, in many cases, go beyond the courts of common law for the purpose of supplying their defects, yet, in general, they profess to act in the same spirit, and are guided by similar principles: in many cases, indeed, they claim a concurrent jurisdiction, and particularly where, from their peculiar construction, the matter can be more fully investigated than in a court of law. The law of equity, as well as the common law, has been from time to time altered by statute."—*Statistical Account of the British Empire.*

I.—*The Statute Law.*

All our statute laws are written documents. They are enacted by the three estates of the realm,—Kings, Lords, and Commons. But the laws sometimes require to be explained. The duty of explaining the laws devolves on the judges. But the judges explain only those portions respecting which there is any dispute: and these portions are pointed out to them by the disputes that arise between the citizens. These disputes refer to various points. Sometimes two laws appear to contradict one another. In this case the judges will fix upon the meaning that is supposed to be most in accordance with the intentions of the legislature; for the judges always pay the legislature the compliment to suppose that it did not intend to enact contradictory laws. In these cases, the principle of reasoning is, as we have already seen, from final cause and effect. Sometimes the question is, whether a certain action, or a certain class of actions, is included within certain phraseology: here the reasoning is between genus and species. Often the question is, whether laws passed in former times do apply to modern inventions or practices: here the reasoning is often by analogy.

This mode of reasoning from written documents, so far as it refers to the laws of our country, will perhaps be best explained by a practical illustration. And for this purpose we shall notice the legal decisions that have taken place with reference to joint-stock banking.

At the renewal of the Bank of England Charter, in the year 1708, a clause was introduced which prohibited any other company, consisting of more than six persons, "to borrow, owe, or take up any sum or sums of money on their bills or notes, payable on demand, or at a less time than six months from the borrowing thereof."

This clause, intended to prohibit the issue of notes, was supposed to prevent the formation of any banks consisting of more than six persons, even should they not issue notes.

But in the year 1833, when the Bank Charter was about to be again renewed, a doubt arose as to whether this was the meaning of the law. The Chancellor of the

Exchequer, Lord Althorp, required the opinion of the Attorney and the Solicitor-General, who stated that the law did not prohibit the formation of banks having more than six partners, provided they did not issue notes. Two other counsel of equal eminence gave their opinion the other way. To remove all doubts, a clause was ultimately introduced, which "*declared* and enacted," that such companies might be formed. Here was an instance of the uncertainty of the law being removed, not by an appeal to the judges, but by a declaratory enactment.

The law having thus sanctioned the establishment of joint-stock banks in London, a joint-stock bank was formed, and, like other banks in London, accepted bills of exchange drawn by its country connexions. But the Bank of England alleged that this was a violation of the above prohibition against "borrowing, owing, or taking up money," &c. Here the reasoning was on the relation of genus and species. The words prohibited a certain class of actions, and the question was, whether accepting bills, as well as issuing notes, was included in the prohibited class. The law decided that it was; and an injunction was obtained in 1837, prohibiting the acceptance of all bills drawn at less than six months after date. In the year 1844, an Act of Parliament granted to such banks the same privileges as are exercised by private bankers.

The lawyers have always maintained that a strict analogy exists between private partnerships and public companies. The only difference, they contend, is in the number of the partners. And hence the laws passed originally with reference to small partnerships they think ought to be applied to large partnerships. From this cause has arisen much litigation, and many appeals to the Government to amend the laws. In the following cases, the appeals have been successful.

The law requires that all the partners in a firm that is either plaintiff or defendant in a suit, should be placed on the record. When joint-stock banks were first allowed in England, in 1826, beyond sixty-five miles from London they were allowed to sue or be sued in the name of one or two partners, who were registered for that purpose at

the Stamp Office. But this privilege was not granted to the banks formed in London. Hence, previous to 1844, those banks were compelled to make a special agreement with every customer, whereby he held himself answerable personally to the trustees for any sum he might become indebted to the bank.

It is against the law for any clergyman to become a trader. Several clergymen became shareholders in joint-stock banks. It was contended, and successfully, that the clergyman having become a partner in a trading company was a trader. The company was therefore illegal, and consequently could neither sue nor be sued in a court of law. An act of parliament was obtained to remedy this defect.

The Northern and Central Bank at Manchester had occasion to sue for debt some of its own shareholders. No private partnership can sue a member of its own firm. It was held that the same rule held in regard to joint-stock banks. The action was lost. But the Chancellor of the Exchequer, Mr. Spring Rice, (now Lord Monteagle,) brought in an act of parliament to meet the case.

The manager of a joint-stock bank at Walsal was tried for robbing the bank of about 7,000*l*. At the trial it was shown that he was a partner in the company. His advocate contended that he was a joint owner of the property, and therefore could not be guilty of robbery. The judge took the same view, and he was acquitted. This evil, too, was amended by a new act of parliament.

Lord Denman brought in an act for allowing shareholders in joint-stock banks, and other parties in similar circumstances, to be examined as witnesses. (6 & 7 Vic. c. 86.) It was enacted, that "no person should be excluded by reason of incapacity from crime *or interest* from giving evidence" in a court of law. But the act contained a *proviso* that excluded the plaintiff himself. An action was brought by a public company, and one of the witnesses was a shareholder in the company. The question was raised, whether he could be legally examined as a witness. The Court of Exchequer decided that he could not. Thus a shareholder in a public company was consi-

dered to be the same as a partner in a private firm. So far, therefore, as concerns the shareholders in joint-stock banks, this *proviso* has annihilated the act.

II.—*The Ecclesiastical Law.*

In ecclesiastical, as well as in civil law, we have to reason from written documents.

"The ecclesiastical laws have been, for the most part, derived from the authority exercised by the Roman Pontiff, in the different states and kingdoms of Europe. The decrees and canons of the Church are said to have been adopted in England as early as the seventh century; but the system of laws at present in force depends upon the decretals and constitutions compiled and promulgated under the influence of successive popes at various periods. In England, the authority of the canon law has been at all times much restricted, being considered, in many points, repugnant to the law of the land, or incompatible with the jurisdiction of the courts of common law. So much of it as has been received, has been gradually accommodated by our lawyers to the habits and customs of the country; and the ecclesiastical laws may now be described, in the language of our statutes, 'laws which the people have taken at their free liberty by their own consent, to be used among them, and not as the laws of any foreign prince, potentate, or prelate.' "—*M'Culloch's Statistical Account of the British Empire.*

With reference to the questions that may arise in the ecclesiastical courts, that call for the exercise of reasoning, in regard to written documents, we cannot adduce a better illustration than by referring to the case that has recently excited so much interest, between the Bishop of Exeter and the Rev. Mr. Gorham. Our quotations are taken from the decision of the Judicial Committee of the Privy Council, as reported in the *Times* of the 9th March, 1850. We take, however, such portions only as shall serve to exemplify the method of interpretation with regard to ecclesiastical law:—

"GORHAM *v.* THE BISHOP OF EXETER.—The judgment in this important appeal, which has been looked forward to with so much interest by the public, was pronounced at

two o'clock yesterday by the Judicial Committee of Privy Council. The members of the committee present were, the Marquis of Lansdowne, Lord Campbell, Lord Brougham, Lord Langdale, Dr. Lushington, Mr. Pemberton Leigh, and Sir Edward Ryan."

"Lord Langdale read the printed judgment of the committee, which was as follows:—

"This is an appeal by the Rev. George Cornelius Gorham against the sentence of the Dean of the Arches Court of Canterbury, in a proceeding termed a *duplex querela*, in which the Right Rev. the Lord Bishop of Exeter, at the instance of Mr. Gorham, was called upon to show cause why he had refused to institute Mr. Gorham to the vicarage of Brampford Speke.

"The judge pronounced that the bishop had shown sufficient cause for his refusal, and thereupon dismissed him from all further observance of justice in the premises; and, moreover, condemned Mr. Gorham in costs.

"From this sentence Mr. Gorham appealed to Her Majesty in Council. The case was referred by Her Majesty to this committee. It has been fully heard before us; and, by the direction of Her Majesty, the hearing was attended by my Lords the Archbishops of Canterbury and York, and the Bishop of London, who are members of Her Majesty's Privy Council. We have satisfaction in being authorized to state, that the Most Rev. Prelates the Archbishops of Canterbury and of York, after having perused copies of this judgment, have expressed their approbation thereof. The Bishop of London does not concur.

"The facts, so far as it is necessary to state them, are as follow:—

"Mr. Gorham, being vicar of St. Just-in-Penwith, in the diocese of Exeter, on the 2d of November, 1847, was presented by Her Majesty to the vicarage of Brampford Speke, in the same diocese, and soon afterwards applied to the Lord Bishop of Exeter for admission and institution to the vicarage.

"The bishop, on the 13th of November, caused Mr. Gorham to be informed that his Lordship felt it his duty to ascertain, by examination, whether Mr. Gorham was

sound in doctrine, before he should be instituted to the vicarage of Brampford Speke.

"The examination commenced on the 17th of December, and was continued at very great length for five days in the same month of December, and (after some suspension) for three more days in the following month of March.

"The questions proposed by the bishop related principally to the sacrament of baptism, and were very numerous, much varied in form, embracing many points of difficulty, and often referring to the answers given to previous questions."

"Mr. Gorham, being refused institution, commenced proceedings in the Arches Court of Canterbury; and at his promotion, a monition with intimation issued on the 15th June, 1848, and thereby the bishop was monished to admit Mr. Gorham to the vicarage, and to institute and invest him therein, or otherwise to appear to show cause why Mr. Gorham should not be admitted and instituted by the official Principal of the Arches Court of Canterbury."

"Adopting this course, the doctrine held by Mr. Gorham appears to us to be this—that baptism is a sacrament generally necessary to salvation, but that the grace of regeneration does not so necessarily accompany the act of baptism that regeneration invariably takes place in baptism; that the grace may be granted before, in, or after baptism; that baptism is an effectual sign of grace, by which God works invisibly in us, but only in such as worthily receive it,—in them alone it has a wholesome effect; and that, without reference to the qualification of the recipient, it is not in itself an effectual sign of grace. That infants baptized, and dying before actual sin, are certainly saved; but that in no case is regeneration in baptism unconditional.

"These being, as we collect them, the opinions of Mr. Gorham, the question which we have to decide is, not whether they are theologically sound or unsound—not whether, upon some of the doctrines comprised in the opinions, other opinions opposite to them may, or may not be held with equal or even greater reason by other learned and pious ministers of the Church, but whether these opinions now under our consideration are contrary or

repugnant to the doctrines which the Church of England, by its articles, formularies, and rubrics, requires to be held by its ministers, so that upon the ground of those opinions the appellant can lawfully be excluded from the benefice to which he has been presented.

"This question must be decided by the articles and liturgy, and we must apply to the *construction of those books the same rules which have long been established, and are by the law applicable to the construction of all written instruments.* We must endeavour to attain for ourselves the true meaning of the language employed, assisted only by the consideration of such external or historical facts as we may find necessary to enable us to understand the subject matter to which the instruments relate, and the meaning of the words employed.

"In our endeavours to ascertain the true meaning and effect of the articles, formularies, and rubrics, we must by no means intentionally swerve from the *old established rules of construction*, or depart from the principles which have received the sanction and approbation of the most learned persons in times past, as being on the whole the best calculated to determine the *true meaning of the documents to be examined. If these principles are not adhered to, all the rights, both spiritual and temporal, of Her Majesty's subjects would be endangered.*"

"The Church having resolved to frame articles of faith, as a means of avoiding diversities of opinion, and establishing consent touching true religion, must be presumed to have desired to accomplish that object as far as it could, and to have decided such of the questions then under discussion as it was thought proper, prudent, and practicable to decide; but it could not have intended to attempt the determination of all the questions which had arisen or might arise, or to include in the articles an authoritative statement of all Christian doctrine; and in making the necessary selection of those points which it was intended to decide, regard was had to the points which were deemed to be most important to be made known to, and to be accepted by, the members of the Church, and to those questions upon which the members of the Church could agree, and that other points, and other questions, were left

for future decision by competent authority, and in the meantime, to the private judgment of pious and conscientious persons.

"Under such circumstances it would perhaps have been impossible, even if it had been thought desirable, to employ language which did not admit of some latitude of interpretation:—if the latitude were confined within such limits as might be allowed without danger to any doctrine necessary to salvation, the possible or probable difference of interpretation may have been designedly intended, even by the framers of the articles themselves; and in all cases in which the articles, considered as a test, admit of different interpretations, it must be held that any sense of which the words fairly admit may be allowed, if that sense be not contradictory to something which the Church has elsewhere allowed or required—and in such a case it seems perfectly right to conclude that those who impose the test command no more than the form of the words employed in their literal and grammatical sense conveys or implies; and that those who agree to them are entitled to such latitude or diversity of interpretation as the same form admits.

"If it were supposed that all points of doctrine were decided by the Church of England, the law could not consider any point as left doubtful. The application of the law, or of the doctrine of the Church of England, to any theological question which arose, must be the subject of decision; and the decision would be governed by the construction of the terms in which the doctrine of the Church is expressed, viz. the construction which, on the whole, would seem most likely to be right.

"But if the case be, as undoubtedly it is, that in the Church of England, many points of theological doctrine have not been decided, then the first and great question which arises in such cases as the present is, whether the disputed point is or was meant to be settled at all, or whether it is left open for each member of the Church to decide for himself according to his own conscientious opinion. If there be any doctrine on which the articles are silent or ambiguously expressed, so as to be capable of two meanings, *we must suppose that it was intended to leave that doctrine to private judgment,* unless the rubrics and formu-

laries clearly and distinctly decide it. If they do, we must conclude that the doctrine so decided is the doctrine of the Church. But, on the other hand, if the expressions used in the rubrics and formularies are ambiguous, it is not to be concluded that the Church meant to establish indirectly as a doctrine that which it did not establish directly as such by the articles of faith—the code avowedly made for the avoiding of diversities of opinion, and for the establishing of consent touching true religion.

"We must proceed, therefore, with *the freedom which the administration of the law requires,* to examine the Articles and the Prayer-book, for the purpose of discovering what it is, if anything, which, by the law of England, or the doctrine of the Church of England as by law established, is declared as to the matter now in question; and to ascertain whether the doctrine held by Mr. Gorham, as we understand it to be disclosed in his examination, is directly contrary or repugnant to the doctrine of the Church."

"On a consideration of the articles, it appears that, besides this particular point, there are others which are left undecided. It is not particularly declared what is the distinct meaning and effect of the grace of regeneration,—whether it is a change of nature, a change of condition, or a change of the relation subsisting between sinful man and his Creator; and there are other points which may very plainly be open to different considerations in different cases.

"Upon the points which were left open, differences of opinion could not be avoided, even amongst those who sincerely subscribed to the articles; and that such differences amongst such persons were thought consistent with subscription to the articles, and were not contemplated with disapprobation, appears from a passage in the Royal Declaration, now prefixed to the articles, and which was first added in the reign of King Charles I., long after the articles were finally settled:—'Though some differences have been ill raised, yet we take comfort in this, that all clergymen within our realm have always most willingly subscribed to the articles established; which is an argument to us that they all agree in the true usual literal meaning of the said articles, and that even in those curious points in which the present differences lie, men of all sorts take the articles of

the Church of England to be for them, which is an argument, again, that none of them intend any desertion of the articles established.'

"If the articles which constitute the code of faith, and from which any differences are prohibited, nevertheless contain expressions which unavoidably admit of different constructions,—and members of the Church are left at liberty to draw from the articles different inferences in matters of faith not expressly decided, and upon such points to exercise their private judgments,—we may reasonably expect to find such differences of opinion allowable in the interpretation of the devotional services, which were framed, not for the purpose of determining points of faith, but of establishing (to use the expression of the statute of Elizabeth) an uniform order of common prayer, and of the administration of sacraments, rites, and ceremonies of the Church of England." * * * *

"We express no opinion upon the theological accuracy of these opinions, or any of them. The writers whom we have cited are not always consistent with themselves, and other writers of great eminence, and worthy of great respect, have held and published very different opinions. But the mere fact that such opinions have been propounded, and maintained by persons so eminent, and so much respected, as well as by very many others, appears to us sufficiently to prove that the liberty which was left by the articles and formularies, has been actually enjoyed and exercised by the members and ministers of the Church of England.

"The case not requiring it, we have abstained from expressing any opinion of our own upon the theological correctness or error of the doctrine of Mr. Gorham, which was discussed before us at such great length, and with so much learning. His Honour the Vice-Chancellor Knight Bruce dissents from the opinion we have formed, but all the other members of the Judicial Committee who were present, are unanimously agreed in opinion—that the doctrine held by Mr. Gorham is not contrary or repugnant to the declared doctrine of the Church of England as by law established; and that Mr. Gorham ought not by reason of the doctrine held by him, to have been refused admission to the vicarage of Brampford Speke.

"And we shall, therefore, humbly report to Her Majesty that the sentence pronounced by the learned Judge in the Arches Court of Canterbury ought to be reversed; and that it ought to be declared that the Lord Bishop of Exeter has not shown sufficient cause why he did not institute Mr. Gorham to the said vicarage."

III.—*The Sacred Scriptures.*

The doctrines and precepts of our holy religion are also contained in written documents. On this subject a few quotations from theologians of high reputation will probably be more acceptable to the reader than any language of my own:—

1.—PRINCIPLES AND RULES OF JUDGMENT IN MATTERS OF MORALITY AND RELIGION. By Dr. Watts.

"Here it may be proper in the first place to mention a few definitions of words and terms.

"By matters of morality and religion, I mean those things which relate to our duty to God, ourselves, or our fellow-creatures. Moral good, or virtue, or holiness, is an action or temper conformable to the rule of our duty. Moral evil, or vice, or sin, is an action or temper unconformable to the rule of our duty, or a neglect to fulfil it. *Note.* The words vice, or virtue, chiefly imply the relation of our actions to men and this world. Sin and holiness, rather imply their relation to God and the other world. Natural good is that which gives us pleasure or satisfaction. Natural evil is that which gives us pain or grief. Happiness consists in the attainment of the highest and most lasting natural good. Misery consists in suffering the highest and most lasting natural evil: that is, in short, heaven or hell. Though this be a just account of perfect happiness and perfect misery, yet wheresoever pain overbalances pleasure, there is a degree of misery: and wheresoever pleasure overbalances pain, there is a degree of happiness.

"I proceed now to lay down some principles and rules of judgment in matters of morality and religion.

"1. The will of our Maker, whether discovered by

reason or revelation, carries the highest authority with it, and is, therefore, the highest rule of duty to intelligent creatures: a conformity or nonconformity to it determines their actions to be morally good or evil.

"2. Whatsoever is really an immediate duty toward ourselves, or toward our fellow-creatures, is more remotely a duty to God; and therefore in the practice of it we should have an eye to the will of God as our rule, and to his glory as our end.

"3. Our wise and gracious Creator has closely united our duty and our happiness together: and has connected sin, or vice, and punishment; that is, he has ordained that the highest natural good and evil should have a close connexion with moral good and evil, and that both in the nature of things, and by his own positive appointment.

"4. Conscience should seek all due information, in order to determine what is duty, and what is sin, because happiness and misery depend upon it.

"5. On this account our inclination to present temporal good, and our aversion to present temporal evil, must be wisely overbalanced by the consideration of future and eternal good and evil, that is, happiness or misery. And for this reason we should not omit a duty, or commit a sin, to gain any temporal good, or to avoid any temporal evil.

"6. Though our natural reason in a state of innocence might be sufficient to find out those duties which were necessary for an innocent creature, in order to abide in the favour of his Maker, yet in a fallen state, our natural reason is by no means sufficient to find out all that is necessary to restore a sinful creature to the divine favour.

"7. Therefore God hath condescended, in various ages of mankind, to reveal to sinful men what he requires of them in order to their restoration, and has appointed in his word some peculiar matters of faith and practice, in order to their salvation. This is called revealed religion; as the things knowable concerning God and our duty by the light of nature, are called natural religion.

"8. There are also many parts of morality and natural

religion, or many natural duties relating to God, to ourselves, and to our neighbours, which would be exceedingly difficult and tedious for the bulk of mankind to find out and determine by natural reason; therefore it has pleased God, in this sacred book of divine revelation, to express the most necessary duties of this kind in a very plain and easy manner, and make them intelligible to souls of the lowest capacity: or they may be very easily derived thence by the use of reason.

"9. As there are some duties much more necessary and more important than others are, so every duty requires our application to understand and practise it, in proportion to its necessity and importance.

"10. Where two duties seem to stand in opposition to each other, and we cannot practise both, the less must give way to the greater, and the omission of the less is not sinful. So ceremonial laws give way to moral: God will have mercy and not sacrifice.

"11. In duties of natural religion, we may judge of the different degrees of their necessity and importance by reason, according to their greater or more apparent tendency to the honour of God, and the good of men: but in matters of revealed religion, it is only divine revelation can certainly inform us what is most necessary and most important; yet we may be assisted also in that search by the exercises of reason.

"12. In actions wherein there may be some scruple about the duty or lawfulness of them, we should choose always the safest side, and abstain as far as we can from the practice of things whose lawfulness we suspect.

"13. Points of the greatest importance in human life, or in religion, are generally the most evident, both in the nature of things, and in the word of God; and where points of faith or practice are exceedingly difficult to find out, they cannot be exceedingly important. This proposition may be proved by the goodness and faithfulness of God, as well as by experience and observation.

"14. In some of the outward practices and forms of religion, as well as human affairs, there is frequently a present necessity of speedy action one way or another: in such a case, having surveyed arguments on both sides, as

far as our time and circumstances admit, we must guide our practice by those reasons which appear most probable, and seem at that time to overbalance the rest: yet always reserving room to admit further light and evidence, when such occurrences return again. It is a preponderation of circumstantial arguments that must determine our actions in a thousand occurrences.

"15. We may also determine upon probable arguments where the matter is of small consequence, and would not answer the trouble of seeking after certainty. Life and time are more precious than to have a large share of them laid out in scrupulous inquiries, whether smoking tobacco, or wearing a periwig, be lawful or no.

"16. In affairs of greater importance, and which may have a long, lasting, and extensive influence on our future conduct or happiness, we should not take up with probabilities, if certainty may be attained. Where there is any doubt on the mind, in such cases, we should call in the assistance of all manner of circumstances, reasons, motives, consequences on all sides: we must wait longer, and with earnest request seek human and divine advice before we fully determine our judgment and our practice; according to the old Roman sentence, *Quod statuendum est semel, deliberandum est diu.* We should be long in considering what we must determine once for all."

2.—A SUMMARY OF THE PRINCIPAL EVIDENCES FOR THE TRUTH AND DIVINE ORIGIN OF THE CHRISTIAN REVELATION. By Bishop Porteus.

"1. From considering the state of the heathen world, before the appearance of our Lord upon earth, it is evident that there was an absolute necessity for a revelation of God's will, and, of course, a great probability beforehand, that such a revelation would be granted.

"2. At the very time when there was a general expectation in the world of some extraordinary personage making his appearance in it, a person called Jesus Christ did actually appear upon earth, asserting that he was the Son of God, and that he was sent from heaven to teach mankind true religion; and he did accordingly found a religion, which from him was called the Christian Religion,

and which has been professed by great numbers of people from that time to the present.

" 3. The books of the New Testament were written by those persons to whom they are ascribed, and contain a faithful history of Christ and his religion; and the account there given of both, may be securely relied upon as strictly true.

" 4. The Scriptures of the Old Testament (which are connected with those of the New) are the genuine writings of those whose names they bear; and give a true account of the Mosaic dispensation, of the historical facts, the divine commands, the moral precepts, and the prophecies which they contain.

" 5. The character of Christ, as represented in the Gospels, affords very strong ground for believing that he was a divine person.

" 6. The sublimity of his doctrines, and the purity of his moral precepts, confirm this belief.

" 7. The rapid and successful propagation of the Gospel by the first teachers of it, through a large part of the world, is a proof that they were favoured with divine assistance and support.

" 8. A comparison betwixt Christ and Mahomet, and their respective religions, leads us to conclude, that as the religion of the latter was confessedly the invention of man, that of the former was derived from God.

" 9. The predictions delivered by the ancient prophets, and fulfilled in our Saviour, show that he was the Messiah expected by the Jews, and that he came into the world by divine appointment, to be the great Deliverer and Redeemer of mankind.

" 10. The prophecies delivered by our Saviour himself, prove that he was endued with the foreknowledge of future events, which belongs only to God, and to those inspired by him.

" 11. The miracles performed by our Lord demonstrate him to have possessed divine power.

" 12. The resurrection of our Lord from the dead, is a fact fully proved by the clearest evidence, and is the seal and confirmation of his divinity, and of the truth of his divinity."

3.—INTERNAL EVIDENCES OF THE DIVINE INSPIRATION OF THE SCRIPTURES. By Dr. Raffles.

"The Christian Religion assumes that the Bible is the word of God, that the books of the Old and New Testament are Divinely inspired, and that, being so, they contain a revelation of his will. Now, the proof of this proposition is of two kinds: the first embracing those evidences which are *external*, arising from prophecy, from miracles, from the testimony of ancient heathen writers, and the like; the second embracing those which are *internal*, and which are furnished by the character and the discoveries of the book itself, the principles and spirit by which it is pervaded, and the influence which it exerts upon the condition and conduct of mankind. It is to this latter kind of evidence that your attention is to be directed this evening. And I may be permitted to observe, that while the external evidences of Divine revelation have been most frequently adduced and illustrated, I cannot but regard the internal evidences, after all, as most satisfactory and conclusive.

"I now proceed to enumerate the principal articles of internal evidence of the Divine inspiration and authority of the Scriptures of the Old and New Testament.

"The first I would specify is, The noble and rational theology of the Old Testament, compared with the low state of literature and philosophy amongst the Jews."

"In the second place, I would specify as another article of internal evidence, The moral precepts, especially of the New Testament."

"Thirdly, The Bible supplies the purest, noblest, and most powerful motives to holiness and virtue—motives indeed which deists reject, though they cannot but admire the effects they uniformly produce in the character and conduct of such as live habitually beneath their influence."

"I proceed to specify, fourthly, The spirit breathed throughout the Holy Scriptures. It is such as highly becomes what they profess to be—a revelation from God."

"In the fifth place, I would mention the candour and impartiality of the writers of the New Testament."

"In the sixth place, There is in the Bible, and especially in the discourses of our Lord, an originality of manner which one would imagine could not fail to strike even the most careless and inattentive reader."

"In the seventh place, An argument of great importance is derived from the perfect conformity of the facts and occurrences mentioned or alluded to by the sacred writers, and especially of the New Testament, with the accounts preserved in history, and other authentic records altogether foreign and independent."

"But a still more powerful argument, in the eighth place, in favour of the inspiration of the sacred Scriptures, arises from the perfect, and, on their part, obviously undesigned, coincidence between the sacred writers themselves."

"We now proceed, in the ninth place, to mention as another article of internal evidence, The positive institutions observed both by Jews and Christians. That there are such institutions observed to the present hour is a thing sufficiently notorious. As, for instance, the Passover, the Feast of Tabernacles, and Circumcision, amongst the Jews; and Baptism, the Lord's Supper, and the Ministry of the gospel amongst Christians."

"In the tenth place, the most inveterate opponents of Christianity cannot but admire its effects on the character and conduct of those who feel the strong influence of its motives, and act under the guidance of its principles."

"Finally: we may specify, as the last article of internal evidence of the Divine inspiration of the Scriptures, Their influence on the general condition of society. Never did a nation become the worse for its reception of the gospel. On the contrary, wherever it has been introduced, in proportion to the cordiality with which it has been welcomed, have been its salutary and beneficial consequences in the moral and social condition of that people."

"And now, on a review of the argument, at what conclusion are you prepared—are you compelled—in all honesty and fairness, to arrive? There is the book; there is the system. Whence is it—from earth or heaven? What is its origin—human or Divine? Human it cannot be; for, if it were, it would be a fable and a forgery—

a fable and a forgery too cunningly devised for human skill, and in the principles and spirit with which it is pervaded, too pure and holy for so base a purpose, or so gross an origin. Human ingenuity *could* not produce it; human depravity *would* not if it could. Then, if it be not human, there is no other alternative—it must be Divine!"—*Lectures to Young Men; Rev. T. Raffles.*

4.—BIBLE LANDMARKS. By the Rev. R. Bickersteth, A.M.

"The apocrypha is not inspired. I gave, in the discourse of this morning, my reasons for saying so; its writers do not claim inspiration; the Jews never considered it to be inspired; there is not a single quotation from the apocrypha in either the Old or New Testament; it contains statements that are false and contradictory; (for example, the Book of Wisdom pretends to have been written by Solomon, and yet the writer, whoever he may have been, quotes many passages from Isaiah and Jeremiah, who did not prophecy till many ages after the time of Solomon. It also represents the Israelites as under subjection to their enemies, whereas, during the reign of Solomon, they enjoyed the utmost freedom and prosperity.) Besides all this, the apocryphal books sanction doctrines that are false, and practices that are immoral. 'Alms,' we are therein told, 'make an atonement for sin.' And from the books of the apocrypha it is easy to defend falsehood, suicide, murder, and the practice of magic. We shrink from the admission of books like these into a position of co-ordinate authority with the word of God, and we cannot forbear repeating, that while the Church of England does permit the occasional use of certain portions of the apocrypha in the course of her public services, she has most carefully guarded, by her sixth Article, against the supposition that the apocryphal writings are to rank with inspired compositions, or to be ever made the source of appeal to establish any point of doctrine.

"With reference to the use of tradition, I have shown you, from various quotations of Scripture, the light in which tradition is placed by God's word; our Saviour mentioned it, never to approve, but invariably to rebuke

its authority. Inspired apostles equally disown it. 'Forasmuch,' writes St. Peter, 'as ye know that ye were not redeemed with corruptible things, as silver and gold, from your vain conversation received by tradition from your fathers.' Tradition is therefore condemned by Scripture. Its tendency is invariably represented to be to the subversion of truth, the fostering of error, and the perversion of the commandments of God. I look upon the Romish use of tradition, therefore, *first*, as wholly unnecessary; the written word is by itself perfect and all-sufficient. I look upon it, *secondly*, as forbidden by the teaching of our Lord and his apostles. And I look upon it, *thirdly*, as the prop to error, and the bane of godliness."—*Bickersteth's Bible Landmarks.*

5.—LITERARY CHARACTERISTICS OF THE BIBLE. By Dr. McCulloch.

"As a sixth characteristic, I observe, that the Scriptures are marked by THE MISCELLANEOUS AND UNSYSTEMATIC MANNER IN WHICH THEY CONVEY RELIGIOUS INSTRUCTION.

"An ordinary writer who had a new theory of doctrine and duty to propound, would probably throw his materials into a systematic form. But the Bible, instead of being a compact and orderly treatise, consists of a series of independent works characterized by the utmost diversity of structure. Instead of presenting the principles of our religion in the form of a system, it sets them before us in a miscellaneous and incidental manner—scattering them here and there, from one end to another of a collection of historical, devotional, prophetic, and epistolary compositions. In a systematic work, you can refer to the very section where information as to any given doctrine may be found. You cannot do this with the Scriptures. The given doctrine may be detailed more at large in one book or in one chapter than in another: but the whole truth concerning it is not to be found in any single chapter or even in any single book: it is to be discovered only by 'searching' the Scriptures, by comparing Scripture with Scripture, and thus supplementing the partial information of one portion by the fuller information of another. Nay, not only so; but 'the truth,' even where most fully revealed,

is generally stated in an indirect and incidental form. I know not that a single instance can be produced of a doctrine announced in the shape of an abstract proposition. The articles of our faith are all exhibited; but they are not propounded in their naked form, as in human creeds and confessions:—they are never introduced but in connexion with something of a practical nature. If we are taught, for example, the doctrine of the Trinity, we are taught it not in express terms, but indirectly, as in Christ's commission to the apostles. If we are taught the doctrine of the atonement, we are taught it—not abstractly as a mere article of faith, but practically as an illustration of the Divine love, or as a proof of the malignity of sin, or as an incentive to gratitude and holiness. In short, the Christian doctrines are revealed—not in an insulated form, but obliquely and incidentally—here in a narrative of facts, there in the course of an argument—here as things to be pre-supposed, there as things to be inferred,—now in plain and literal terms, now under the veil of metaphor and allegory. So that, in order to ascertain the real amount of the system of theology and morals which the Bible reveals, it is necessary to explore the whole sacred territory—to compare book with book and passage with passage—to collect from each its peculiar contribution—and to collate the whole into one systematic body."

"The Bible, observe, is not one book, but a collection of sixty-six different books. It is the production, not of one writer, but of thirty-six different writers—men of every diversity of rank, talent, and mental culture—from the monarch to the gatherer of sycamore fruit, from the accomplished pupil of Gamaliel to the unlettered fisherman of Galilee. It is a work, moreover, not of one age, but of many and distant ages. The opening books date six hundred years earlier than any other literary composition extant, while the closing book is a production of the age of the Cæsars; the whole is the connected literature of a period not short of fifteen centuries. Then how various are the books in kind. Some are histories; some, biographies; some, poems; some, digests of public law; some, collections of national proverbs; some, epistles to churches; some, private letters to friends. Nor are their

subjects less diversified than the dates and the authors. Instead of discussing only one or two points, they discuss a thousand—and these the most profound and perplexing within the whole range of human inquiry, the most unfavourable to unity of sentiment, the most vexed by controversy and debate.

"Now certainly it could never have been expected beforehand, on any ordinary grounds of probability, that a series of works, open to so many sources of diversity, should exhibit such a thing as uniformity of sentiment, or congruity of design. The analogy of all other instances in the history of literature, would have led us to anticipate the utmost diversity of doctrine, no less than of style and execution. Anything like a systematic unity of thought and purpose would have been pronounced impossible. Nevertheless, the perfect doctrinal agreement of the sacred books is one of their most indisputable properties. The Scripture authors, though living in ages very distant from each other, and writing under circumstances as dissimilar as can well be imagined, are not only entirely at one on all the subjects which they touch, but undesignedly contribute, each his contingent, towards the completion of a magnificent UNITY."—*McCulloch's Literary Characteristics of the Holy Scriptures.*

6.—DIFFERENT DEGREES OF ASSENT. By Dr. Watts.

"There are many things even in religion, as well as in philosophy and civil life, which we believe with very different degrees of assent; and this is, or should be, always regulated according to the different degrees of evidence which we enjoy: and, perhaps, there are a thousand gradations in our assent to the things we believe, because there are thousands of circumstances relating to different questions, which increase or diminish the evidence we have concerning them, and that in matters both of reason and revelation.

"I believe there is a God, and that obedience is due to him from every reasonable creature: this I am most fully assured of, because I have the strongest evidence, since it is the plain dictate both of reason and revelation.

"Again, I believe there is a future resurrection of the

dead, because Scripture tells us so in the plainest terms, though reason says nothing of it. I believe also that the same matter of our bodies which died (in part at least) shall arise; but I am not so fully assured of this circumstance, because the revelation of it is not quite so clear and express. Yet further I believe that the good men who were acquainted here on earth, shall know each other in heaven; but my persuasion of it is not absolutely certain, because my assent to it arises only from circumstantial reasoning of men upon what God has told us, and therefore my evidences are not strong beyond a possibility of mistake."

"What is said before concerning truth or doctrines may be also affirmed concerning duties; the reason of both is the same; as the one are truths for our speculation, the others are truths for our practice. Duties which are expressly required in the plain language of Scripture, or dictated by the most evident reasoning upon first principles, ought to bind our consciences more than those which are but dubiously inferred, and that only from occasional occurrences, incidents, and circumstances: as, for instance, I am certain that I ought to pray to God; my conscience is bound to this, because there are most evident commands for it to be found in Scripture, as well as to be derived from reason. I believe also that I may pray to God either by a written form, or without one, because neither reason nor revelation expressly requires either of these modes of prayer at all times, or forbids the other. I cannot, therefore, bind my conscience to practise the one so as utterly to renounce the other; but I would practise either of them as my reason and other circumstances direct me.

"Again, I believe that Christians ought to remember the death of Christ by the symbols of bread and wine; and I believe there ought to be pastors in a Christian church some way ordained or set apart to lead the worship, and to bless and distribute these elements: but the last of these practices is not so expressly directed, prescribed, and required in Scripture as the former; and therefore, I feel my conscience evidently bound to remember the death of Christ with some society of Christians or other, since it is a most plain command, though their methods of ordaining

a pastor be very different from other men, or from my own opinion; or whether the person who distributes these elements be only an occasional or a settled administrator, since none of these things are plainly determined in Scripture. I must not omit or neglect an express command, because some unnecessary circumstances are dubious. And I trust I shall receive approbation from the God of nature, and from Jesus my judge at the last day, if I have endeavoured in this manner to believe and practise every thing in proportion to the degree of evidence which God has given me about it, or which he has put me into a capacity to seek and obtain in the age and nation wherein I live."—*Watts's Improvement of the Mind.*

7.—RULES OF INTERPRETATION. By Robert Robinson.

"Every author proposes some end in writing; this end must needs agree with his general character, peculiar circumstances, &c. To observe this design is no small help towards understanding the biblical writers. On the contrary, to consider the whole Bible as we consider the book of Proverbs, and to ground enormous doctrines on detached sentences, are gross absurdities, manifest abuses of the word of God."

"'Consult good sense,' adds Mr. Claude. Very proper advice, for good natural sense will go far in understanding plain primitive Christianity: and, indeed, will often take a hint from the most common incident on any subject. A friend of mine, disgusted with the common representation of the devil carrying our Saviour in his claws, as a bird of prey carries a dove through the air, and setting him on a pinnacle of the temple, tried Mr. Claude's experiment. He set a sensible little boy to read the fourth of Matthew, and after he had read the fifth verse, 'The devil taketh him up into the holy city, and setteth him on a pinnacle of the temple,' he asked the little gentleman, 'How do you think the devil *took* Jesus Christ, and *set* him on a pinnacle of the temple?' 'Why, sir,' replied the little expositor, 'as you would *take* me up to the top of St. Paul's.'"—*Robinson's Notes to Claude.*

SECTION V.

ERRORS IN REASONING.

"THE art of false reasoning is of great antiquity. It is nearly as old as the creation. We learn from the Bible, that it was first discovered and successfully made use of by the Angel of Deceit, when, in the *apparent* light of reason, he availed himself of the serpent's ingenuity to seduce our first parents from their state of happiness to his own state of misery—from a state of peaceful enjoyment, the natural consequence of obedience to their Creator, to a state of misery, the never-failing result of disobedience. This art is very simple in itself, and may easily be acquired by any one who possesses an ordinary share of the actor's talent, and is endowed with a persuasive tongue and an unscrupulous conscience.

"The process, as set forth in the third chapter of the first book in the Bible, is very short and simple. A doubt as to the truth of God's word is *first* ingeniously suggested —'Yea, *hath* God said, Ye shall surely not eat of every tree of the garden?' *Then* the *truth* of that word is positively denied—'Ye shall *not* surely die.' And, lastly, the *expediency* of acting in opposition to the command of God is adroitly introduced into the argument of the arch-deceiver, namely, the *beauty* of the fruit, and its virtue *to make wise* those that partake of it—'God doth know that in the day ye eat thereof, then your eyes shall be opened, and ye shall be as gods, knowing good and evil.'

"This kind of reasoning seldom fails to succeed with persons who are themselves unconscious of deceit, if they once begin to palter with the truth,—if error be allowed to insinuate the first doubt of the truthfulness of God's word. But to perfect the delusion, the plea in a false argument should not be altogether false—a little truth should be interwoven with it—truth so stated as to con-

stitute a practical lie. In the case just stated, the great deceiver spoke truth when he told the woman that after she had tasted the forbidden fruit her eyes would be opened to discern both good and evil—so it proved: hitherto Adam and herself had known only good; now, to their sorrow, they knew what evil was also.

"But in these latter days, the art of false reasoning has been greatly elaborated. The short straightforward process adopted by the inventor of the science would scarcely answer the purposes to which it is now applied. The mischievous result which was then attained in a day, is now often made the work of years, requiring the support of many positive and reiterated denials of the truth for its completion. Sometimes we see one error established, and the supposed impossibility of uprooting it made the reason for engrafting upon it many others. At other times, a dexterous transposition of the right order of things—inverting the order of cause and effect, or, in other words, 'putting the cart before the horse'—proves a very successful method of thwarting the truth, and of preparing the way for the establishment of false conclusions. But when the truth to be opposed is so self-evidently true as to baffle every attempt to find a plausible argument against it, the advocate of error may even then possibly succeed by availing himself of the power of ridicule—the power of which is oftentimes the greater in its effect upon *shallow-minded* men, in proportion as the truth which it assails is grave and important. This may occasionally be seen when the sacred truths of Scripture are made the subject of profane jokes. Ridicule may, however, be used with great effect in *support* of the truth as well as *against* it, as is evident in the conflict which the prophet Elijah had with the prophets of Baal. It is a powerful weapon for good or evil, just as the object to which it is made subservient is true or false.

"Then, again, the advocate of error may often obtain great temporary influence over the minds of that large multitude of people who are carried away by mere outward appearances, by the *manner* in which he addresses them. One class of these advocates will enlist the prejudices of the multitude on their side by sheer impudence,

arrogating to themselves a monopoly of wisdom, and imputing to all who are opposed to them a monopoly of ignorance and stupidity. The success of this class depends chiefly upon the readiness with which they can make use of superficial arguments, hard names, and rude speeches; and very successful they often are when addressing the multitude in opposition to those who are placed in the higher stations of life. Men of the same character of mind, but better provided with scholastic logic, succeed by another process. In advocating a bad cause, their *forte* is to introduce their case by assuming it to be unanswerably good; and, after expressing in many words and various ways their conviction that the truthfulness of their case will be made as clear as the sun at noon-day, they then diverge into a large mass of minor and unimportant particulars, until those whom they wish to delude become sufficiently confused to lose sight of the main question: the main question being thus got rid of, the fluent orator has then little difficulty in persuading his unreflecting hearers that the case is almost as clear as he had declared he would *prove* it to be. Another class succeed in making error wear the appearance of truth, by the solemnity with which they can advocate a fallacy, and the gravity with which they can give utterance to a few common-place remarks, which have some truth in them, but which are quite delusive in the use to which they are applied by the speaker. And there is another class of delusive reasoners, whose chief power consists in the skill with which they can administer flattery, either in large or small doses, so as to suit the vanity of those whom they wish to delude. This is a power which requires to be used with great discretion—when applied too strongly it defeats its own object."

"We may safely assume that no wise man, however clever he may be, will ever think of studying the art of false reasoning with the intention of practising it; but although no wise man would wish to make use of this delusive art himself, he may find it very useful to be so far acquainted with it, as to enable him to see through the ingenuity of those who are disposed to use it, and thus to avail himself of the *serpent's wisdom* to neutralize its

sting. To be very skilful in the practice of the science, it requires the professor to possess several qualifications natural and acquired; but to guard against its mischievous power, the only qualifications which are essentially necessary, are a sound judgment and a sincere love of the truth; and these qualifications are happily within the reach of every honest man, though his sphere may be ever so humble, and his literary acquirements equally small. When it has fallen to the lot of any of these humble disciples of the truth to become its *active* advocates, they have often accomplished, by a few words judiciously spoken, effects most beneficial to mankind. We are told that the truly great General Washington rarely required so much as ten minutes to give utterance to the remarks which he had to offer to the American Senate, and it may generally be assumed that where a practised speaker requires an hour or two to make a speech on a simple question, and has the power of charming his hearers for that length of time, there is great reason for his audience to be on their guard, lest the brilliancy of the orator should conceal some duplicity in his argument; but, wherever this duplicity does exist, the more any one is acquainted with the devices of the false reasoner, the better able he will of course be to detect and expose the *cloven foot*, which even in these days may sometimes be found under a garment of light."—*The Art of False Reasoning exemplified.*

The different kinds of false reasons are called sophisms or fallacies. We shall take our description of these fallacies chiefly from Dr. Watts, but classified according to our own arrangement of the principles of reasoning.

False reasons may assume any of the following forms:—

I.—Fallacies arising from not understanding the question.

1. Proving a different question from that in dispute:—

"The first sort of sophism is called *ignoratio elenchi*, or a mistake of the question; that is, when something else is proved, which has neither any necessary connexion or consistency with the thing inquired, and consequently

gives no determination to the inquiry, though it may seem at first sight to determine the question: as, if any should conclude that St. Paul was not a native Jew, by proving that he was born a Roman; or if they should pretend to determine that he was neither Roman nor Jew, by proving that he was born at Tarsus in Cilicia: these sophisms are refuted by showing that all these three may be true; for he was born of Jewish parents in the city of Tarsus, and by some peculiar privilege granted to his parents, or his native city, he was born a denizen of Rome. Thus there is neither of these three characters of the apostle inconsistent with each other, and therefore the proving one of them true does not refute the others."—*Watts's Logic.*

2. Assuming as true the question in dispute:—

"The next sophism is called *petitio principii*, or a supposition of what is not granted; that is, when any proposition is proved by the same proposition in other words, or by something that is equally uncertain and disputed: as if any one undertake to prove that the human soul is extended through all the parts of the body, because it resides in every member, which is but the same thing in other words. Or, if a Papist should pretend to prove that his religion is the only Catholic religion, and is derived from Christ and his apostles, because it agrees with the doctrine of all the fathers of the Church, all the holy martyrs, and all the Christian world throughout all ages; whereas this is the great point in contest, whether their religion does agree with that of all the ancients and the primitive Christians, or no.

"That sort of fallacy which is called a *circle*, is very near akin to the *petitio principii;* as when one of the premises in a syllogism is questioned and opposed, and we intend to prove it by the conclusion: or, when in a train of syllogisms we prove the last by recurring to what was the conclusion of the first. The Papists are famous at this sort of fallacy; when they prove the Scripture to be the word of God by the authority or infallible testimony of their Church; and when they are called to show the infallible authority of their Church, they pretend to prove it by the Scripture."—*Ibid.*

3. Abusing the ambiguity of words, which may be done in different ways :—

"The next sort of sophisms arises from our abuse of the ambiguity of words, which is the largest and most extensive kind of fallacy; and indeed several of the other fallacies might be reduced to this head.

"When the words or phrases are plainly equivocal, they are called sophisms of equivocation; as, if we should argue thus: 'He that sends forth a book into the light, desires it to be read; he that throws a book into the fire, sends it into the light; therefore he that throws a book into the fire, desires it to be read.'

"This sophism, as well as the foregoing, and all of the like nature, are solved by showing the different senses of the words, terms, or phrases. Here light in the major proposition signifies the public view of the world; in the minor it signifies the brightness of flame and fire; and therefore the syllogism has four terms, or rather it has no middle term, and proves nothing.

"But where such gross equivocations and ambiguities appear in arguments, there is little danger of imposing upon ourselves or others. The greatest danger, and which we are perpetually exposed to in reasoning, is, where the two senses or significations of one term are near akin, and not plainly distinguished, and yet they are really sufficiently different in their sense to lead us into great mistakes, if we are not watchful. And indeed the greatest part of controversies in the sacred or civil life, arise from the different senses that are put upon words, and the different ideas which are included in them."—*Ibid.*

II.—Fallacies connected with the relation of subject and attribute.

1. Judging of a thing by that which only belongs to it accidentally :—

"The next is called *fallacia accidentis*, or a sophism wherein we pronounce concerning the nature and essential properties of any subject according to something which is merely accidental to it. This is akin to the former, and is also very frequent in human life. So if opium or the

Peruvian bark has been used imprudently, or unsuccessfully, whereby the patient has received injury, some weaker people absolutely pronounce against the use of the bark or opium upon all occasions whatsoever, and are ready to call them poison. So wine has been the accidental occasion of drunkenness and quarrels; learning and printing may have been the accidental cause of sedition in a state; the reading of the Bible, by accident, has been abused to promote heresies or destructive errors; and for these reasons they have all been pronounced evil things. Mahomet forbade his followers the use of wine; the Turks discourage learning in their dominions; and the Papists forbid the Scripture to be read by the laity. But how very unreasonable are these inferences, and these prohibitions which are built upon them!"—*Ibid.*

2. Passing from what is true in some respects to what is true absolutely:—

"The next sophism borders upon the former; and that is, when we argue from that which is true in particular circumstances, to prove the same thing true absolutely, simply, and abstracted from all circumstances: this is called in the schools a sophism, *a dicto secundum quid ad dictum simpliciter;* as, That which is bought in the shambles is eaten for dinner; raw meat is bought in the shambles; therefore raw meat is eaten for dinner. Or thus, Livy writes fables and improbabilities when he describes prodigies and omens; therefore Livy's Roman History is never to be believed in anything. Or thus, There may be some mistake of transcribers in some part of Scripture; therefore Scripture alone is not a safe guide for our faith.

"This sort of sophism has its reverse also; as when we argue from that which is true simply and absolutely, to prove the same thing true in all particular circumstances whatsoever; as if a traitor should argue from the sixth commandment, 'Thou shalt not kill a man,' to prove that he himself ought not to be hanged: or if a madman should tell me, 'I ought not to withhold his sword from him, because no man ought to withhold the property of another.'

"These two last species of sophisms are easily solved, by showing the difference betwixt things in their absolute nature, and the same thing surrounded with peculiar circumstances, and considered in regard to special times, places, persons, and occasions; or by showing the difference between a moral and a metaphysical universality, and that the proposition will hold good in one case, but not in the other."—*Ibid.*

III.—Fallacies connected with the relation of a whole and its parts.

Passing from a divided sense to a connected sense, or from a connected sense to a divided sense :—

"The sophisms of composition and division come next to be mentioned.

"The sophism of composition is when we infer anything concerning ideas in a compounded sense, which is only true in a divided sense. And when it is said in the Gospel that Christ made the blind to see, and the deaf to hear, and the lame to walk, we ought not to infer hence that Christ performed contradictions; but those who were blind before, were made to see, and those who were deaf before, were made to hear, &c. So when the Scripture assures us the worst of sinners may be saved, it signifies only, that they who have been the worst of sinners may repent and be saved, not that they shall be saved in their sins. Or if any one should argue thus: Two and three are even and odd; five are two and three; therefore five are even and odd. Here that is very falsely inferred concerning two or three in union, which is only true of them divided.

"The sophism of division is when we infer the same thing concerning ideas in a divided sense, which is only true in a compounded sense; as, if we should pretend to prove that every soldier in the Grecian army put an hundred thousand Persians to flight, because the Grecian soldiers did so. Or if a man should argue thus: Five is one number; two and three are five; therefore two and three are one number."—*Ibid.*

IV.—Fallacies connected with the relation of genus and species.

1. Misapplication of general principles :—

"A third example is the opposition sometimes made to legitimate interferences of government in the economical affairs of society, grounded upon a misapplication of the maxim, *that an individual is a better judge than the government of what is for his own pecuniary interest.* This objection was urged to Mr. Wakefield's system of colonization, one of the greatest practical improvements in public affairs which have been made in our time. Mr. Wakefield's principle, as most people are now aware, is the artificial concentration of the settlers, by fixing such a price upon unoccupied land as may preserve the most desirable proportion between the quantity of land in culture, and the labouring population. Against this it was argued, that if individuals found it for their advantage to occupy extensive tracts of land, they, being better judges of their own interest than the legislature (which can only proceed on general rules), ought not to be restrained from doing so. But in this argument it was forgotten that the fact of a man's taking a large tract of land is evidence only that it is his interest to take as much as other people, but not that it might not be for his interest to content himself with less, if he could be assured that other people would do so too; an assurance which nothing but a government regulation can give. If all other people took much, and he only a little, he would reap none of the advantages derived from the concentration of the population and the consequent possibility of procuring labour for hire, but would have placed himself, without equivalent, in a situation of voluntary inferiority. The proposition, therefore, that the quantity of land which people will take when left to themselves is that which it is most for their interest to take, is true only *secundum quid :* it is only their interest while they have no guarantee for the conduct of one another. But the argument disregards the limitation, and takes the proposition for true *simpliciter.*"

"Under the same head of fallacy (*à dicto secundum quid ad dictum simpliciter*) might be placed all the errors which

are vulgarly called misapplications of abstract truths: that is, where a principle, true (as the common expression is) *in the abstract*, that is, all modifying causes being supposed absent, is reasoned upon as if it were true absolutely, and no modifying circumstances could ever by possibility exist."—*Mill's Logic.*

2. Reasoning from loose definitions:—

"Those who are familiar with the writings of Madame de Staël, know how constantly it was the practice of that acute and plausible writer, to have recourse to what may be called *the fallacy of definition*, which consists in giving an arbitrary meaning to some well-known expression, sufficiently large to include, or sufficiently narrow to exclude, the subject under discussion. Never was this fallacy more adroitly employed than in the very able and ingenious speech of Mr. Roundell Palmer, in Friday night's debate; a speech, the very ability and ingenuity of which render it peculiarly satisfactory to those who, like ourselves, entertain the opposite opinion, because we feel that few are likely to succeed where so adroit an advocate has failed. The familiar term which Mr. Palmer sought unduly to extend by definition, is 'religious liberty.'"—*Times, March* 17, 1851.

V.—Fallacies connected with the relation of cause and effect,—whether the cause be physical, moral, conditional, or final.

Taking for a cause that which is not a cause:—

"The next kind of sophism is called *non causâ pro causâ*, or the assignation of a false cause. This the peripatetic philosophers were guilty of continually, when they told us that certain beings, which they called substantial forms, were the springs of colour, motion, vegetation, and the various operations of natural beings in the animate and inanimate world; when they inform us that nature was terribly afraid of a vacuum; and that this was the cause why the water would not fall out of a long tube if it was turned upside down: the moderns, as well as the

ancients, fall often into this fallacy, when they positively assign the reasons of natural appearances, without sufficient experiments to prove them.

"Astrologers are overrun with this sort of fallacies, and they cheat the people grossly by pretending to tell fortunes, and to deduce the cause of the various occurrences in the lives of men from the various positions of the stars and planets, which they call aspects.

"When comets, and eclipses of the sun and moon, are construed to signify the fate of princes, the revolution of states, famine, wars, and calamities of all kinds, it is a fallacy that belongs to this rank of sophisms.

"There is scarce anything more common in human life than this sort of deceitful argument. If any two accidental events happen to concur, one is presently made the cause of the other. If Titus wronged his neighbour of a guinea, and in six months after he fell down and broke his leg, weak men will impute it to the divine vengeance on Titus for his former injustice. This sophism was found also in the early days of the world; for when holy Job was surrounded with uncommon miseries, his own friends inferred, that he was a most heinous criminal, and charged him with aggravated guilt as the cause of his calamities; though God himself by a voice from heaven solved this uncharitable sophism, and cleared his servant Job of that charge.

"How frequent is it among men to impute crimes to wrong persons! We too often charge that upon the wicked contrivance and premeditated malice of a neighbour, which arose merely from ignorance, or from an unguarded temper. And on the other hand, when we have a mind to excuse ourselves, we practise the same sophism, and charge that upon our inadvertence or our ignorance, which perhaps was designed wickedness. What is really done by a necessity of circumstances, we sometimes impute to choice. And again, we charge that upon necessity which was really desired and chosen.

"Sometimes a person acts out of judgment in opposition to his inclination; another person perhaps acts the same thing out of inclination, and against his judgment. It is hard for us to determine with assurance what are

the inward springs and secret causes of every man's conduct; and therefore we should be cautious and slow in passing a judgment where the case is not exceedingly evident: and if we should mistake, let it rather be on the charitable than on the censorious side."—*Watts's Logic.*

"And when Paul had gathered a bundle of sticks, and laid them on the fire, there came a viper out of the heat, and fastened on his hand. And when the barbarians saw the venomous beast hang on his hand, they said among themselves, No doubt this man is a murderer, whom, though he hath escaped the sea, yet vengeance suffereth not to live. And he shook off the beast into the fire, and felt no harm. Howbeit they looked when he should have swollen, or fallen down dead suddenly: but after they had looked a great while, and saw no harm come to him, they changed their minds, and said that he was a god."—*Acts* xxviii. 3—6.

VI.—Fallacies connected with the relation of analogy, comparison, and contrast:—

"Now an error, or fallacy, of analogy may occur in two ways. Sometimes it consists in employing an argument of either of the above kinds with correctness indeed, but overrating its probative force. This very common aberration is sometimes supposed to be particularly incident to persons distinguished for their imagination; but in reality it is the characteristic intellectual vice of those whose imaginations are barren, either from want of exercise, natural defect, or the narrowness of their range of ideas. To such minds, objects present themselves clothed in but few properties; and as, therefore, few analogies between one object and another occur to them, they almost invariably overrate the degree of importance of those few: while one whose fancy takes a wider range, perceives and remembers so many analogies tending to conflicting conclusions, that he is not so likely to lay undue stress upon any of them. We always find that those are the greatest slaves to metaphorical language who have but one set of metaphors.

"But this is only one of the modes of error in the employment of arguments of analogy. There is another,

more properly deserving the name of fallacy; namely, when resemblance in one point is inferred from resemblance in another point, although there is not only no evidence to connect the two circumstances by way of causation, but the evidence tends positively to disconnect them. This is properly the Fallacy of False Analogies.

"As a first instance, we may cite that favourite argument in defence of absolute power, drawn from the analogy of paternal government in a family, which government is not, and by universal admission ought not to be, controlled *by* (though it sometimes ought to be controlled *for*) the children. Paternal government, in a family, works well; therefore, says the argument, despotic government in a state will work well: implying that the beneficial working of parental government depends, in the family, upon the only point which it has in common with political despotism, namely, irresponsibility. Whereas it does not depend upon that, but upon two other attributes of parental government, the affection of the parent for the children, and the superiority of the parent in wisdom and experience; neither of which properties can be reckoned upon, or are at all likely to exist, between a political despot and his subjects; and when either of these circumstances fails, even in the family, and the influence of the irresponsibility is allowed to work uncorrected, the result is anything but good government. This, therefore, is a false analogy.

"Another example is the not uncommon *dictum*, that bodies politic have youth, maturity, old age, and death, like bodies natural: that after a certain duration of prosperity, they tend spontaneously to decay. This also is a false analogy, because the decay of the vital powers in an animated body can be distinctly traced to the natural progress of those very changes of structure which, in their earlier stages, constitute its growth to maturity; while in the body politic the progress of those changes cannot, generally speaking, have any effect but the still further continuance of growth: it is the stoppage of that progress, and the commencement of retrogression, that alone would constitute decay. Bodies politic die, but it is of disease, or violent death: they have no old age."—*Mill's Logic.*

VII.—Fallacies connected with the evidence of parables, fables, and proverbs:—

"The legs of the lame are not equal: so is a parable in the mouth of fools."—*Prov.* xxvi. 7.

A similitude or parable "should not be false in itself, as in this case the mind revolts not only against the thing itself but against the conclusion drawn from it. On this rule I shall take the liberty of making the following observations: Several of the ancients illustrated and endeavoured to prove the truth and certainty of the resurrection by the history of the Phœnix, a bird supposed to be produced in Arabia once in one hundred years,—there never being more than one at a time. It is reported that, when this bird finds its end approaching, it builds itself a nest of the most fragrant spices and aromatic plants, which, being set on fire by the rays of the sun, the bird is consumed in it; but from its ashes a worm or grub is formed, out of which another Phœnix in process of time arises. Others say, that it dies in the nest, and a grub is formed out of the marrow of its bones. Both these relations are equally true. Herodotus, Dion Cassius, Tacitus, and Pliny, mention this fabulous animal; and I have met with this account seriously produced by Clemens Alexandrinus, and other Christian fathers, to prove the resurrection of the body. Now it is well known no such bird ever did or ever could exist, that the supposed fact is impossible, and that the conclusion drawn from it, is not only not solid and convincing, but absurd, because the premises are all false."—*Dr. Adam Clarke's Commentary on the Bible, Matt.* xiii.

"The word of the Lord came unto me again, saying, What mean ye, that ye use this proverb concerning the land of Israel, saying, The fathers have eaten sour grapes, and the children's teeth are set on edge? As I live, saith the Lord God, ye shall not have occasion any more to use this proverb in Israel. Behold, all souls are mine; as the soul of the father, so also the soul of the son is mine: the soul that sinneth, it shall die."—*Ezek.* xviii. 1—4.

"And he said unto them, Ye will surely say unto me this proverb, Physician, heal thyself: whatsoever we have heard done in Capernaum, do also here in thy country. And he said, Verily I say unto you, No prophet is accepted in his own country. But I tell you of a truth, Many widows were in Israel in the days of Elias, when the heaven was shut up three years and six months, when great famine was throughout all the land; but unto none of them was Elias sent, save unto Sarepta, a city of Sidon, unto a woman that was a widow. And many lepers were in Israel in the time of Eliseus the prophet; and none of them was cleansed, saving Naaman the Syrian."—*Luke* iv. 23—27.

VIII.—Fallacies connected with reasoning from examples.

Drawing a general conclusion from a defective Induction:—

"There is, after all these, another sort of sophism, which is wont to be called an Imperfect Enumeration, or a False Induction, when from a few experiments or observations men infer general theorems and universal propositions."—*Watts's Logic.*

"I have already said that the mode of Simple Enumeration is still the common and received method of Induction in whatever relates to man and society. Of this a very few instances, more by way of memento than of instruction, may suffice. What, for example, is to be thought of all the 'common-sense' maxims for which the following may serve as the universal formula: 'Whatsoever has never been, will never be.' As for example: negroes have never been as civilized as whites sometimes are, therefore it is impossible they should be so. Women, as a class, have not hitherto equalled men as a class in intellectual energy and comprehensiveness, therefore they are necessarily inferior. Society cannot prosper without this or the other institution; *e.g.* in Aristotle's time, without slavery; in later times, without an established priesthood, without artificial distinctions of ranks, &c. One working man in a thousand, educated, while the nine hundred and ninety-nine remain uneducated, has usually aimed at raising himself out of his class, therefore education makes people dissatisfied with their condition in life. Bookish men, taken from speculative pursuits, and set to work on something they know nothing about, have generally been found or thought to do it ill; therefore, philosophers are unfit for business, &c. &c. All these are inductions by simple enumeration."—*Mill's Logic.*

IX.—Fallacies connected with reasonings from written documents.

Dean Swift has given us an illustration of this kind of erroneous reasoning in his "Tale of a Tub:"—

"Next winter, a player, hired for the purpose by the Corporation of Fringemakers, acted his part in a new comedy, all covered

with silver fringe, and according to the laudable custom gave rise to that fashion. Upon which the brothers, consulting their father's will, to their great astonishment found these words: 'Item, I charge and command my said three sons, to wear no sort of silver fringe upon or about their said coats,' &c., with a penalty in case of disobedience too long here to insert. However, after some pause, the brother so often mentioned for his erudition, who was well skilled in criticisms, had found in a certain author, which he said should be nameless, that the same word which in the will is called fringe, does also signify a broomstick; and doubtless ought to have the same interpretation in this paragraph. This, another of the brothers disliked, because of that epithet, silver, which could not, he humbly conceived, in propriety of speech be reasonably applied to a broomstick; but it was replied upon him, that this epithet was understood in a mythological and allegorical sense. However, he objected again, why their father should forbid them to wear a broomstick on their coats, a caution that seemed unnatural and impertinent; upon which he was taken up short, as one that spoke irreverently of a mystery, which doubtless was very useful and significant, but ought not to be over-curiously pried into, or nicely reasoned upon. And in short, their father's authority being now considerably sunk, this expedient was allowed to serve as a lawful dispensation for wearing their full proportion of silver fringe.

"A while after, was revived an old fashion, long antiquated, of embroidery with Indian figures of men, women, and children. Here they had no occasion to examine the will. They remembered but too well how their father had always abhorred this fashion; that he made several paragraphs on purpose, importing his utter detestation of it, and bestowing his everlasting curse to his sons whenever they should wear it. For all this, in a few days, they appeared higher in the fashion than any body else in the town. But they solved the matter by saying, that these figures were not at all the same with those that were formerly worn, and were meant in the will. Besides, they did not wear them in that sense, as forbidden by their father, but as they were a commendable custom, and of great use to the public. That these rigorous clauses in the will did therefore require some allowance, and a favourable interpretation, and ought to be understood *cum grano salis*."

"Revered Brethren—Let me advise you to get drunk. You will perhaps think me doubly drunk in giving you such advice. But good men have got drunk. Noah was a good man, Lot was a good man; yet they both got drunk. You tell me our Lord said, 'Be not overcharged with drunkenness.' Mind, he did not say, Do not get drunk, but, Be not *overcharged* with it. Now,

can't you get drunk without being dead drunk? But you reply, St. Paul says, 'Be not drunk with wine, wherein is excess.' Observe here again, he does not say, Be not drunk, but, Be not excessively drunk. Observe, too, he says, Be not drunk with *wine*—he does not prohibit spirits. So you may get drunk on beer or brandy, even to excess, without violating this injunction." —*See Robinson's Notes to Claude.*

"'AWFUL SACRIFICE' TRADESMEN.—One of these generous, disinterested, sacrificing gentlemen had stuck upon every other pane of glass 'Selling off—no reasonable offer refused—must close on Saturday.' This man once offered himself as bail or security, in some case which was brought before a magistrate. The magistrate asked him if he was worth 200*l.*, he said, 'Yes.' 'But you are about to remove, are you not?' 'No.' 'Why, you write up, Selling off.' 'Yes, every shopkeeper is selling off.' 'You say, No reasonable offer will be refused.' 'Why, I should be very unreasonable if I did refuse such offers.' 'But you say, Must close on Saturday.' 'To be sure; you would not have me open on Sunday, would you?' A curious scheme this to entice, if not to entrap, the unwary."—*Anon.*

X.—Miscellaneous Fallacies.

Historical evidence—*Napoleon Buonaparte:*

"I suppose it will not be denied, that the three following are among the most important points to be ascertained, in deciding on the credibility of witnesses; first, whether they have the means of gaining correct *information;* secondly, whether they have any *interest* in concealing truth, or propagating falsehood; and, thirdly, whether they *agree* in their testimony. Let us examine the present witnesses upon all these points.

"First, what means have the editors of newspapers for gaining correct information? We know not, except from their own statements. Besides what is copied from other journals, foreign or British, (which is usually more than three-fourths of the news published,) they profess to refer to the authority of certain 'private correspondents' abroad; *who* these correspondents are, what means *they* have of obtaining information, or whether they exist at all, we have no way of ascertaining. We find ourselves in the condition of the Hindoos, who are told by their priests that the earth stands on an elephant, and the elephant on a tortoise; but are left to find out for themselves what the tortoise stands on, or whether it stands on anything at all.

"So much for our clear knowledge of the means of *information* possessed by these witnesses; next, for the grounds on which we are to calculate on their *veracity.*

"Have they not a manifest interest in circulating the wonderful accounts of Napoleon Buonaparte and his achievements, whether true or false? Few would read newspapers if they did not sometimes find wonderful or important news in them; and we may safely say that no subject was ever found so inexhaustibly interesting as the present."

"Still it will be said, that unless we suppose a regularly preconcerted plan, we must at least expect to find great discrepancies in the accounts published. Though they might adopt the general outline of facts one from another, they would have to fill up the detail for themselves; and in this, therefore, we should meet with infinite and irreconcileable variety.

"Now this is precisely the point I am tending to; for the fact exactly accords with the above supposition; the discordance and mutual contradictions of these witnesses being such as would alone throw a considerable shade of doubt over their testimony. It is not in minute circumstances alone that the discrepancy appears, such as might be expected to appear in a narrative substantially true; but in very great and leading transactions, and such as are very intimately connected with the supposed hero. For instance, it is by no means agreed whether Buonaparte led in person the celebrated charge over the bridge of Lodi, (for *celebrated* it certainly is, as well as the siege of Troy, whether either event ever really took place or no,) or was safe in the rear, while Augereau performed the exploit. The same doubt hangs over the charge of the French cavalry at Waterloo. The peasant Lacoste, who professed to have been Buonaparte's guide on the day of battle, and who earned a fortune by detailing over and over again to visitors all the particulars of what the great man said and did up to the moment of flight,—this same Lacoste has been suspected by others, besides me, of having never even been near the great man, and having fabricated the whole story for the sake of making a gain of the credulity of travellers."

"It appears, then, that those on whose testimony the existence and actions of Buonaparte are generally believed, fail in ALL the most essential points on which the credibility of witnesses depends: first, we have no assurance that they have access to correct information; secondly, they have an apparent interest in propagating falsehood; and, thirdly, they palpably contradict each other in the most important points."

"'But what shall we say to the testimony of those many respectable persons who went to Plymouth on purpose, and saw Buonaparte with their own eyes? must they not trust their senses?' I would not disparage either the eyesight or the veracity of these gentlemen. I am ready to allow that they went to Plymouth for the purpose of seeing Buonaparte; nay, more, that

they actually rowed out into the harbour in a boat, and came alongside of a man-of-war, on whose deck they saw a man in a cocked hat, who, *they were told*, was Buonaparte. This is the utmost point to which their testimony goes; how they ascertained that this man in the cocked hat had gone through all the marvellous and romantic adventures with which we have so long been amused, we are not told."

"There is one more circumstance which I cannot forbear mentioning, because it so much adds to the air of fiction which pervades every part of this marvellous tale; and that is, the *nationality* of it.

"Buonaparte prevailed over all the hostile states in turn *except England*; in the zenith of his power, his fleets were swept from the sea, *by England*; his troops always defeat an equal, and frequently even a superior number of those of any other nation, *except the English*; and with them it is just the reverse; twice, and twice only, he is personally engaged against an *English commander*, and both times he is totally defeated; at Acre, and at Waterloo; and to crown all, *England* finally crushes this tremendous power, which had so long kept the continent in subjection or in alarm; and to the *English* he surrenders himself prisoner! Thoroughly national, to be sure! It *may* be all very true; but I would only ask, *if* a story *had* been fabricated for the express purpose of amusing the English nation, could it have been contrived more ingeniously?"—*Historic Doubts relative to Napoleon Buonaparte.*

Time-serving in religion:—

"By-ends.—My brethren, we are, as you see, going all on pilgrimage; and for our better diversion from things that are bad, give me leave to propound unto you this question.

"Suppose a man, a minister or a tradesman, &c., should have an advantage lie before him to get the good blessings of this life, yet so as that he can by no means come by them, except, in appearance at least, he becomes extraordinary zealous in some points of religion that he meddled not with before; may he not use this means to attain his end, and yet be a right honest man?

"Money-love.—I see the bottom of your question; and, with these gentlemen's good leave, I will endeavour to shape you an answer. And, first, to speak to your question as it concerneth a minister himself: suppose a minister, a worthy man, possessed but of a very small benefice, and has in his eye a greater, more fat and plump by far; he has also now an opportunity of getting it, yet so as by being more studious, by preaching more frequently and zealously, and, because the temper of the people requires it, by altering of some of his principles; for my part, I see no reason

why a man may not do this, provided he has a call, ay, and more, a great deal besides, and yet be an honest man. For why?

"1. His desire of a greater benefice is lawful, (this cannot be contradicted,) since it is set before him by Providence; so then he may get it if he can, making no question for conscience sake.

"2. Besides, his desire after that benefice makes him more studious, a more zealous preacher, &c., and so makes him a better man, yea, makes him better improve his parts, which is according to the mind of God.

"3. Now, as for his complying with the temper of his people, by deserting, to serve them, some of his principles, this argueth, 1. That he is of a self-denying temper. 2. Of a sweet and winning deportment. And, 3. So more fit for the ministerial function.

"4. I conclude, then, that a minister that changes a small for a great, should not, for so doing, be judged as covetous; but rather, since he is improved in his parts and industry hereby, be counted as one that pursues his call, and the opportunity put into his hand to do good.

"And now to the second part of the question, which concerns the tradesman you mentioned. Suppose such an one to have but a poor employ in the world, but by becoming religious, he may mend his market, perhaps get a rich wife, or more and far better customers to his shop; for my part, I see no reason but this may be lawfully done. For why?

"1. To become religious is a virtue, by what means soever a man becomes so.

"2. Nor is it unlawful to get a rich wife, or more custom to my shop.

"3. Besides, the man that gets these by becoming religious, gets that which is good of them that are good, by becoming good himself: so then here is a good wife, and good customers, and good gain, and all these by becoming religious, which is good; therefore, to become religious to get all these is a good and profitable design."—*Bunyan's Pilgrim's Progress.*

The borrowed umbrella:—

"I have now to speak of Umbrellas. Would you, my son, from what you have read of Arab hospitality—would you think of counting out so many penny-pieces, and laying them in the hand of your Arab host, in return for the dates and camel's milk that, when fainting, dying, with thirst, hunger, and fatigue, he hastened to bestow upon you? Would you, I say, chink the copper coin in the man's ear, in return for this kindly office, which the son of the desert thinks an 'instrumental part of his religion?' If, with an ignorance of the proper usages of

society, you would insult that high-souled Arab by any tender of money, then, my son—but no! I think you incapable of the sordidness of such an act,—then would you return a Borrowed Umbrella!

"Consider it. What is an umbrella but a tent that a man carries about with him—in China, to guard him from the sun,—in England to shelter him from the rain? Well, to return such a portable tent to the hospitable soul who lent it,—what is it but to offer the Arab payment for shelter? What is it but to chaffer with magnanimity, to reduce its greatness to a mercenary lodging-house keeper? Umbrellas may be 'hedged about' by cobweb statutes; I will not swear it is not so; there may exist laws that make such things property; but sure I am that the hissing contempt, the loud-mouthed indignation of all civilized society, would sibilate and roar at the bloodless poltroon, who should engage law on his side to obtain for him the restitution of a—lent umbrella."—*Punch's Letters to his Son.*

The word fallacy is applied in ordinary conversation, not only to erroneous processes of reasoning, but also to erroneous opinions. A book has been much advertised, entitled "Fallacies of the Faculty." It points out what the author deems erroneous principles and proceedings in the practice of medicine. The title probably gave rise to the titles in Punch of "Fallacies of the Female Faculty, and Fallacies of the Male Faculty." We will conclude this section with these fallacies, giving precedence to the ladies:—

"FALLACIES OF THE LADIES.—That a tight corset is the main-stay of beauty.

"That it would be a sin against good manners not to ask every visitor the stereotyped question, 'Have you been to the Opera this season?'

"That a lady's age is one of those things which 'must be imagined, but can never be described.'

"That a husband has a peculiar pleasure in stopping to look at every shop he passes, when his wife takes him out for 'a little walk.'

"That every omnibus runs to the Bank.

"That thin shoes are conducive to health.

"That anything is good, as long as it's bought 'a bargain.'

"That children are indispensable for the proper enjoyment of a dessert.

"That so long as the music of a song is heard, the words are quite unnecessary.

"That no journey is properly carried out, excepting with an immense quantity of luggage.

"That it is necessary to defer the meaning of a letter until the postscript.

"That a young lady loses position if she is in the habit of going down into the kitchen.

"That it is a proof of gentility to affect not to know what there is for dinner.

"That hysterics are the best argument for bringing a person round to the lady's way of thinking.

"That no well-bred mother ought to put foot in the nursery."

"FALLACIES OF THE GENTLEMEN—*By a Lady who unfortunately knows them only too well.*—That women are only born to be their slaves.

"That dinner is to be ready for them the very minute they come into the house.

"That a lady's bonnet can be put on as quickly as a gentleman's hat.

"That we can dress in a minute; and that ringing the bell violently has the effect of making us dress one bit the quicker.

"That they can do every thing so much better than we can—from nursing the baby down to poking the fire.

"That they are the 'Lords of the Creation.' *(Pretty Lords, indeed!)*

"That nothing can be too good for them; for I am sure if you were to put a hot joint before them every day, that still they would be dissatisfied, and would be grumbling that you never gave them cold meat.

"That they know our age so much better than we do ourselves. *(It's so very likely!)*

"That they may invite whom, and as many, as they please; but if we only invite our mamma to come and stop with us, or just ask a dear unmarried sister or two to stop with us for a month, that there's to be no peace for us so long as they remain in the house.

"That music can be learnt without practising, and that it is necessary for them to rush out, and to slam the door violently, the very moment we begin to open our voices, or to run over the last new Polka.

"That sleeping after dinner promotes conversation.

"That they know what dress and bonnet becomes us so much better than we do.

"That it is necessary to make a poor woman cry, because a stupid shirt-button happens to be off. I declare, some men must believe that their wives cut off their shirt-buttons purposely, from the savage pleasure they take in abusing them for it.

"That we are not allowed to faint, or to have the smallest fit of hysterics, without being told 'not to make a fool of ourselves.'

"That housekeeping does not require any money, and if we venture to ask for any, that it is pleasant to be met with all sorts of black looks and insinuations, as to 'what we can do with it all;' or very agreeable to be told that we will be 'the ruin of him some day.' *(I should like to see the day!)*

"That the house never requires cleaning, or the tables rubbing, or the carpets beating, or the furniture renewing, or the sofas fresh covers, or, in fact, that anything has a right to wear out, or to be spoilt or broken; and, in short, that every thing ought to last for ever!

"That a poor lone woman is never to have any pleasure, but always, always, to stop at home, and 'mind her children.' *(I'm tired of such nonsense.)*

"That the wish to go to the Opera is to be the sure prelude to a quarrel.

"That their daughters can learn music, painting, playing, dancing, and all the accomplishments, without the aid of a single master.

"That the expenses of one's household do not increase with one's family, but, rather, that ten children can be supported for the same cost as one.

"That no husband is perfect, like Hercules, without his club, and that the less a wife sees of her husband, the fonder she actually grows of him.

"That it is a pleasure for us to sit up for them.

"Our fair correspondent says, she thinks the above fallacies are enough for the present, and we certainly agree with her; but if the gentlemen show any more of their airs, she declares that she will give them a lot more."

PART IV.

THE FORMS OF REASONING.

We have now, gentle reader, passed through three parts of our work. In the First Part we considered the Introduction to Reasoning. In the Second Part we considered some of the Principles of Reasoning. In the Third Part we considered another class of the Principles of Reasoning. In this, the Fourth Part, we are going to consider the Forms of Reasoning. But you may ask what is the difference between the *principles* of reasoning and the *forms* of reasoning? The difference is this,—the principle refers to the nature of the reason, the form refers to the manner of expressing it; the principle refers to ideas, the form refers to the language and the method. We will explain this by an example. Suppose in the morning, your wife advises you to put on your greatcoat, to prevent your taking cold. Here the principle of the argument is the relation of cause and effect. And the validity or strength of this argument must depend upon the soundness of this principle in its application to the present case; that is, upon the probability that you will take cold if you do not wear your greatcoat. But this argument may be proposed in a variety of forms. She may say, "My dear, put on your greatcoat this morning; if you don't, you'll be sure to take cold." Or she may speak interrogatively: "Why don't you put on your greatcoat this morning? Do you wish to take cold again as you did before? What's the use of having a greatcoat, if you don't wear it such a day as this." Or she may speak syllogistically, and say, "Whenever you are in danger of taking cold, you should put on a great-coat; I am sure you are in danger of taking cold this morning; therefore, this morning you should put on your great-coat."

You will perceive then, that by the forms of reasoning,

we mean the different ways in which reasons may be placed before us. The strength of an argument must depend upon the soundness of its principles; but the readiness with which that strength is perceived, will depend very often upon the manner in which the argument may be presented to the mind. Hence, different arguments are drawn up in different forms, according to the subjects discussed, and the character of the audience to whom they are addressed. These different forms chiefly refer to the method, and the style. To be able to reason with the greatest effect, we should study not only the rules of logic, but also the rules of grammar, and endeavour to acquire a facility of expressing the same ideas in different words. Dr. Watts, in his Improvement of the Mind, has given us some rules for the acquisition of this useful talent:—

"1. Accustom yourselves to read those authors who think and write with great clearness and evidence, such as convey their ideas into your understanding, as fast as your eye or tongue can run over their sentences; this will imprint upon the mind a habit of imitation; we shall learn the style with which we are very conversant, and practise it with ease and success.

"2. Get a distinct and comprehensive knowledge of the subject which you treat of; survey it on all sides, and make yourself perfect master of it; then you will have all the sentiments that relate to it in your view, and under your command, and your tongue will very easily clothe those ideas with words which your mind has first made so familiar and easy to itself.

Scribendi recte sapere est et principium et fons,
Verbaque provisam rem non invita sequentur.
HOR. de Arte Poet.

Good teaching from good knowledge springs;
Words will make haste to follow things.

"3. Be well skilled in the language which you speak; acquaint yourself with all the idioms and special phrases of it, which are necessary to convey the needful ideas on the subject of which you treat, in the most various and most easy manner to the understanding of the hearer: the variation of a phrase in several forms is of admirable use to instruct; it is like turning all sides of the subject to view; and if the learner happens not to take in the ideas in one form of speech, probably another may be successful for that end.

"Upon this account I have always thought it a useful manner of instruction, which is used in some Latin schools, which they

call variation. Take some plain sentence in the English tongue, and then turn it into many forms in Latin;* as, for instance, A wolf let into the sheep-fold will devour the sheep: If you let a wolf into the fold, the sheep will be devoured: The wolf will devour the sheep, if the sheep-fold be left open: If the fold be not left shut carefully, the wolf will devour the sheep: The sheep will be devoured by the wolf, if it find the way into the fold open: There is no defence of the sheep from the wolf, unless it be kept out of the fold: A slaughter will be made among the sheep, if the wolf can get into the fold. Thus, by turning the active voice of verbs into the passive, and the nominative case of nouns into the accusative, and altering the connexion of short sentences by different adverbs or conjunctions, and by ablative cases with a preposition brought instead of the nominative, or by participles sometimes put instead of the verbs, the negation of and the contrary, instead of the assertion of the thing first proposed, a great variety of forms of speech will be created, which shall express the same sense.

"4. Acquire a variety of words, a *copia verborum*. Let your memory be rich in synonymous terms, or words expressing the same happy effect with the variation of the same thing: this will not only attain the phrases in the foregoing direction, but it will add a beauty also to your style, by securing you from an appearance of tautology or repeating the same words too often, which sometimes may disgust the ear of the learner.

"5. Learn the art of shortening your sentences, by dividing a long complicated period into two or three small ones. When others connect and join two or three sentences in one by relative pronouns, as which, whereof, wherein, whereto, &c., and by parentheses frequently inserted, do you rather divide them into distinct periods; or at least, if they must be united, let it be done rather by conjunctions and copulatives, that they may appear like distinct sentences, and give less confusion to the hearer or reader.

"I know no method so effectual to learn what I mean, as to take now and then some page of an author, who is guilty of such a long involved parenthetical style, and translate it into plainer English, by dividing the ideas or the sentences asunder, and multiplying the periods, till the language become smooth and easy, and intelligible at first reading.

"6. Talk frequently to young and ignorant persons upon subjects which are new and unknown to them, and be diligent to inquire whether they understand you or not; this will put you upon changing your phrases and forms of speech in a variety, till you can hit their capacity, and convey your ideas into their understanding."—*Watts's Improvement of the Mind.*

* This can be done in English as well as in Latin. See Lindley Murray's Exercises.

SECTION I.

DESCRIPTIVE REASONING.

I MUST tell you what I mean by descriptive reasoning. I mean a description which forms part of a piece of reasoning. I told you at the commencement of my book that any fact in history, or any object in nature, might become the subject of an argument. Now then, if we describe an object with a view to reason about it, I call that descriptive reasoning. For example, were a lecturer on anatomy to describe the eye, with the view of showing its construction to his pupils, that would be a description, and nothing more. Were a theologian to describe the eye in order to show that it must have had an intelligent author, then the description would become a piece of descriptive reasoning. Archdeacon Paley has done this:—

"Observe a new-born child first lifting up its eye-lids. What does the opening of the curtain discover! The anterior part of two pellucid globes, which, when they come to be examined, are found to be constructed upon strict optical principles; the self-same principles upon which we ourselves construct optical instruments. We find them perfect for the purpose of forming an image by refraction; composed of parts executing different offices: one part having fulfilled its office upon the pencil of light delivering it over to the action of another part; that to a third, and so onward: the progressive action depending for its success upon the nicest and minutest adjustment of the parts concerned; yet these parts so in fact adjusted, as to produce, not by a simple action or effect, but by a combination of actions and effects, the result which is ultimately wanted. And forasmuch as this organ would have to operate under different circumstances, with strong degrees of light, and with weak degrees, upon near objects, and upon remote ones, and these differences demanded, according to the laws by which the transmission of light is regulated, a corresponding diversity of structure; that the aperture, for example, through which the light passes, should be larger or less; the lenses rounder or flatter, or that their distance from the tablet, upon which the picture is delineated, should be shortened or lengthened; this, I say, being the case, and the difficulty to which the eye was to be adapted, we find its several parts capable of being occasionally changed, and a most artificial apparatus provided to produce that change."—*Paley's Natural Theology.*

The reasoning process by which the description is connected with the point to be proved, may exist only in the mind, or it may be expressed in a subsequent stage of the argument.

In all our reasonings, great use is made of description. When a member of parliament proposes a new law, he commences with *describing* the present state of the law, shows what improvement is necessary, and then proposes his remedy. A barrister opens his address to the jury by a statement of the case; this statement is descriptive; and descriptions of past events, and of good and bad characters, form a large portion of the addresses from the pulpit. In long speeches, generally, there is often much minute detail, and reporters who cut down these speeches for the newspapers usually shorten or omit the descriptions.

I. A description is a statement of the particular circumstances by which persons, places, and objects, are distinguished from other persons, places, and objects.

The description of a person sometimes refers only to his figure and countenance. "Leah was tender-eyed, but Rachel was beautiful and well favoured." "Joseph was a goodly person, and well favoured." "In all Israel there was none to be so much praised as Absalom for his beauty; from the sole of his foot even to the crown of his head, there was no blemish in him." "The stature of William the Conqueror was *tall*, and the composition of his bones and muscles uncommonly strong." "The exterior of Henry V., as well as his deportment, was engaging. His stature was somewhat above the middle size. His countenance beautiful, his limbs genteel and slender, but full of vigour."

Descriptions of a person sometimes refer only to appearance, manners, or habits. "And he said unto them, What manner of man was he which came up to meet you, and told you these words? And they answered him, He was an hairy man, and girt with a girdle of leather about his loins. And he said, It is Elijah the Tishbite."—2 *Kings*, i. 7, 8.

The following description shows that the most logical

and controversial of all the apostles was remarkable for his politeness:—

"Paul's politeness, too, must not be overlooked, compounded as it was of dignity and deference. It appeared in the mildness of the manner in which he delivered his most startling messages, both to Jews and heathens; in his peaceful salutations; in his winning reproofs; the 'excellent oil which did not break the head;' in the delivery of his allusions to his own claims and services; and, above all, in the calm, self-possessed, and manly attitude he assumed before the rulers of his people, and the Roman authorities. In the language of Peter and John to their judges there is an abruptness savouring of their rude fisherman life, and fitter for the rough echoes of the Lake of Galilee, than for the tribunals of power. But Paul, while equally bold and decided, is far more gracious. He lowers his thunder-bolt before his adversary, ere he launches it. His shaft is 'polished' as well as powerful. His words to King Agrippa—'I would to God, that not only thou, but also all that hear me this day, were both almost and altogether such as I am, except these bonds'—are the most chivalric utterances recorded in history. An angel could not bend more gracefully, or assume an attitude of more exalted courtesy. And certain we are, that had his sermon before Felix been preserved, it had been a new evidence of his perfect politeness. No Nathan or John Knox-like downright directings in it. In his captive circumstances this had been offensive. No saying, in so many words, 'Thou art the man,' (no pointing even with his finger, or significant glance of his eye); but a grave, calm, impersonal argument on 'righteousness, temperance, and judgment to come,' which, as it 'sounded on its way,' sounded the very soul of the governor, and made him tremble as if a cold hand from *above* had been suddenly laid on his heart. Paul's sermon he felt to the core, trembled at, and shrank from, but no more resented than if he had read it in the pages of a dead author. Paul's eye might have increased his tremor, but could no more have excited his wrath than those eyes in pictures, which seem to follow our every motion, and to read our very soul,—excite us to resentment or reprisal. And here, again, we notice a quality fitting Paul to be the Apostle of the West. Having to stand before governors and kings, and the emperor himself, he must be able to stand with dignity, or with dignity to fall."—*Gilfillan's Bards of the Bible.*

The following is a description of the benevolent Howard:

"In all Howard's relations with his domestics and tenants, we see the very form and pressure of ancient, oriental manners. His

habits recall a thousand exquisite pictures of primitive life—Boaz going forth amongst the reapers where he first encountered Ruth —Miltiades sitting at the portico of his dwelling, calling to the strangers from the Chersonese, as they were passing by tired and soiled by travel, and offering them the hospitalities of his house —and other charming images rise up to memory as fitting counterparts to the frequent glimpses which we get of the patriarch of Cardington. Howard regularly visited all the cottagers on his estate—entered their habitations in the most familiar manner —conversed with them about their humble affairs—listened to their representations, and administered to their wants.

"When he arrived at any town where he intended to rest for the night, he would go to the best hotel, order his dinner, with beer and wine, just like any other traveller, and stipulate that his own servant should wait upon him at table. When the cloth was laid, the viands spread out, and the host withdrawn, honest Prole would quietly remove the costly luxuries from the table to the sideboard, while his eccentric master would busy himself in preparing his homely repast of bread and milk, upon which he would then banquet with gusto,—equally to his own satisfaction and that of the landlord. Waiters, postilions, and all persons of their class, he was in the habit of paying munificently, being unwilling to have his mind disturbed, or his temper chafed, by paltry disputes about a few pence. He used to say that in the expenses of a journey which must necessarily cost three or four hundred pounds, twenty or thirty pounds extra were not worth a thought; and his liberalities in these matters not only procured him the good will of those who were the humble, but not unimportant instruments of his rapid progresses from place to place, but often accelerated his transits, and saved that time which was of so much more value to the world than money."—*Dixon's Life of Howard.*

Sometimes the description of a person refers to his mental faculties or attainments. "Behold, I have seen a son of Jesse the Beth-lehemite, that is cunning in playing, and a mighty valiant man, and a man of war, and prudent in matters, and a comely person, and the LORD is with him."—1 *Sam.* xvi. 18.

"JOHN WESLEY AT OXFORD.—At college he continued his studies with all diligence, and was noticed there for his attainments, and especially for his skill in logic, by which he frequently put to silence those who contended with him in after life. No man, indeed, was ever more dexterous in the art of reasoning. A charge was once brought against him that he delighted to per-

plex his opponents by his expertness in sophistry. He repelled it with indignation. 'It has been my first care,' says he, 'to see that my cause was good, and never either in jest or earnest to defend the wrong side of a question, and shame on me if I cannot defend the right after so much practice, and after having been so early accustomed to separate truth from falsehood, how artfully soever they are twisted together.'"—*Southey's Life of Wesley.*

Sometimes the description is not of a person, but of a character. See the description of a good wife in the last chapter of Proverbs. This description consists in an enumeration of particulars.

"Anilla had been bred a Papist all her days, and though she does not know much of religion, yet she resolves never to part from the Roman Catholic faith, and is obstinately bent against a change. Now I cannot think it unlawful to teach her the true Christian, that is, the Protestant religion, out of the epistle to the Romans: and show her that the same doctrine is contained in the catholic epistles of St. Peter, James, and Jude, and thus let her live and die a good Christian, in the belief of the religion I teach her out of the New Testament, while she imagines she is a Roman Catholic still, because she finds the doctrine she is taught in the catholic epistles, and in that to the Romans."—*Watts's Improvement of the Mind.*

A description of a place may include its situation, climate, productions, both of nature and art, and its peculiar beauties, curiosities, advantages, and inconveniences. But such full descriptions occur chiefly in books of history or geography. A description intended to be used in reasoning embraces only the chief point in which that country, city, town, village, &c., differs from others of the same class. See a description of Tyre in the 27th chapter of the Prophet Ezekiel. See also a description of the Land of Canaan, at page 33.

We insert as a further illustration the following description of Abney-park, chiefly from its former connexion with our great teacher in logic, Dr. Watts:—

"Bunhill-fields, the burying-place of the most illustrious of the worthies of Nonconformity, was for many years a sacred spot to its children, and the favourite cemetery of the more opulent of the Dissenters. It can never lose its distinction; for whatever changes may be introduced by custom or legislation, it

will still be a fact, not only unchangeable, but more and more consecrated by time, that in Bunhill-fields lie the ashes of the Howes and the Owens, the Baxters and the Bunyans of former periods—men whose memory will be cherished so long as persecution is remembered, learning loved, genius and piety appreciated and revered. Indeed, when Bunhill-fields is closed as a burying-place, and its mighty dead sleep secluded and undisturbed, we should not wonder if it came to be more often, and more reverently, visited than it is at present, by those who delight in making pilgrimages to the cradles or the graves of heroic men. Abney-park is fast taking the place of Bunhill-fields. Nor is this to be wondered at. This cemetery is not subjected to any ecclesiastical domination; the feuds and partialities of sectarians and politicians are not perpetuated here; no line, visible or invisible, divides consecrated from unconsecrated earth; no splendid Episcopal chapel frowns on or smiles at the inferior architecture and limited accommodations of its Nonconformist neighbour; while the whole space is hallowed and sanctified by thrilling associations connected with the modern 'Poet of the Sanctuary.' Abney-park is formed of the grounds formerly belonging to the house of Sir Thomas Abney—in which house Dr. Watts resided for more than thirty years. Here he wrote most of his works, and composed many of his hymns and psalms. The walks and trees are sacred to devotion—and to divine poesy in one of her most glowing and glorious forms; and it is fitting and natural that the present race of Nonconformists, who have in them anything worthy of their fathers, should wish to rest within the groves and grounds that once echoed to the voice and lyre of one who sang so sweetly of the blessed rest of the happy dead, and so sublimely of the upper world and the anticipated resurrection."—*Christian Times.*

Descriptions of objects are of two kinds,—one relating to living forms, and the other to such as are inanimate. The latter refer to those which are the works of nature, and to those which are produced by art.

"Hast thou given the horse strength? hast thou clothed his neck with thunder? Canst thou make him afraid as a grasshopper? the glory of his nostrils is terrible. He paweth in the valley, and rejoiceth in his strength: he goeth on to meet the armed men. He mocketh at fear, and is not affrighted; neither turneth he back from the sword. The quiver rattleth against him, the glittering spear and the shield. He swalloweth the ground with fierceness and rage: neither believeth he that it is the sound of the trumpet. He saith among the trumpets, Ha,

hay; and he smelleth the battle afar off, the thunder of the captains, and the shouting."—*Job* xxxix. 19—25.

"I went by the field of the slothful, and by the vineyard of the man void of understanding; and, lo, it was all grown over with thorns, and nettles had covered the face thereof, and the stone wall thereof was broken down. Then I saw, and considered it well: I looked upon it, and received instruction."—*Prov.* xxiv. 30—32.

II. A description of past events is called a narrative. A narrative is an account of events, and of the persons or objects concerned in them. It includes detached events, biography, and history.

Detached events are single circumstances, generally preserved on account of some particular instruction or amusement which they convey. Such are fables and anecdotes, and they are often used to inculcate a mere principle or opinion, or to illustrate the truth or efficacy of an opinion or principle previously stated. Dr. Watts has given us several examples of this in his "Improvement of the Mind:—"

"*In learning any new thing, there should be as little as possible first proposed to the mind at once, and that being understood, and fully mastered, proceed then to the next adjoining part yet unknown.* This is a slow, but safe and sure way to arrive at knowledge. If the mind apply itself at first to easier subjects and things near akin to what is already known, and then advance to the more remote and knotty parts of knowledge by slow degrees, it will be able in this manner to cope with great difficulties, and prevail over them with amazing and happy success. Mathon happened to dip into the two last chapters of a new book of geometry and mensurations; as soon as he saw it, and was frightened with the complicated diagrams which he found there, about the frustums of cones and pyramids, &c., and some deep demonstrations among conic sections, he shut the book again in despair, and imagined none but a Sir Isaac Newton was ever fit to read it. But his tutor happily persuaded him to begin the first pages about lines and angles; and he found such surprising pleasure in three weeks' time in the victories he daily obtained, that at last he became one of the chief geometers of his age.

"This association of ideas is of great importance and force, and may be of excellent use in many instances of human life. *One idea, which is familiar to the mind, connected with others which are new and strange, will bring those new ideas into easy remembrance.*

Maronides had got the first hundred lines of Virgil's Æneis printed upon his memory so perfectly, that he knew not only the order and number of every verse from one to a hundred in perfection, but the order and number of every word in each verse also; and by this means he would undertake to remember two or three hundred names of persons or things by some rational or fantastic connexion between some word in the verse, and some letter, syllable, property, or accident of the name or thing to be remembered, even though they had been repeated but once or twice at most in his hearing."

Biography is a successive account of the events which have affected or distinguished particular individuals. In biography we relate the particular qualities for which the person is admired or esteemed, and observe the instances which are given of those qualities.

"DR. WATTS.—Isaac Watts was born at Southampton, July 17, 1674. He was the eldest of eight children, and was named after his father, who kept a respectable boarding-school in that town, and was a deacon of the Independent Church. His mother was a Miss Taunton. Mr. Watts had suffered for his Nonconformity, both in his paternal property and in person, having been more than once imprisoned. During his incarceration, Mrs. Watts was to be seen sitting on a stone near the prison-door, nursing her infant son, Isaac. Mr. Watts, nevertheless, brought up his large family in much respectability, and had the happiness of surviving to see his eldest son 'eminent for literature and venerable for piety:' he died in a good old age, February 10, 1736-7. Young Isaac gave early indications of a precocious intellect. At four years old he began to learn Latin; at seven, he lisped in numbers. He received his early education in the Free-School at Southampton, then under the Rev. Mr. Pinhorne, Rector of All Saints', to whom the grateful pupil, at the age of twenty, addressed an elegant Latin Ode. In his sixteenth year, having declined a generous offer made for his support at one of the Universities, he was sent to an Academy of some repute in London, kept by the Rev. Thomas Rowe, pastor of the Independent Church then meeting at Girdler's Hall; and, three years afterwards, being in his nineteenth year, be joined in communion with that church. His constitution received irreparable injury from the intemperate ardour with which he at this time pursued his studies. At the age of twenty, he returned to his father's house, where he continued for two years, preparing himself more expressly for the work of the ministry. The state of his health may have rendered it advisable that he should remain for some time under his father's roof. The first engagement which he

accepted, was that of tutor in the family of Sir John Hartopp, Bart., at Stoke Newington. In 1696, he appears to have been called to the ministry; but his first sermon was preached on the birth-day that completed his twenty-fourth year, A. D. 1698."

"His 'Treatise on Logic,' originally composed for the use of his pupil, young Hartopp, was published in 1724, and was soon adopted as a text-book in the Dissenting Academies. It was also introduced into the Universities, and therefore, says Dr. Johnson, 'wants no private recommendation.'"

"The closing scene was worthy of his saintly career: and he expired without a struggle, Nov. 25, 1748, in his seventy-fifth year."—*Conder's Poet of the Sanctuary.*

"DR. CHANNING OF AMERICA.—When we have said that Channing was an unspeakably large-hearted man, we may add that he had a mind of great clearness and variety, but not strong or original. He reflected in happy combination the best thoughts of the age which produced him, but added nothing to its actual knowledge. He illustrated and beautified all he touched, but he discovered no new treasures, nor indicated where they might be sought. As his mind was not remarkable for quality, so also his attainments were not great or diversified. He was deficient in solid learning, and was often sophistical in reasoning. He was not only wanting in competence as a theologian, but apparently neither versed in the history of doctrines, nor in the science of biblical criticism. His philosophy was popular and practical, not ordinarily passing beyond the region of moral duties. His style was clear and perspicuous; never brilliant, never dull. What it wanted in fulness and sinewy strength was almost compensated by the harmony and grace of its outlines. Calm and serious, almost monotonously, it generally seemed like the sweet changeless ripple of some clear gently-flowing stream upon its bed of stones. Yet his writings show the thinker and Christian as a great and moving man. It is impossible not to feel the constant presence of great truths and principles, of 'a deep, wide humanity,' and holy, universal love. Channing's influence will most likely decrease rather than extend: his works are scarcely weighty enough to stand permanently in the literature of moral and religious questions. But there are wide circles in which his gentle wisdom may yet long be a fount of pure and refreshing waters. The record of his life adds immeasurably to the pleasure and reverence with which our gratitude accepts his works."—*Anon.*

History is a successive and connected account of the events which have affected nations or people. Such are the History of England, the History of the Jews, &c.

The substance of history is called chronology, which is merely a list of the events which have occurred to any nation or people, with the date when each of those events happened. In writing history, we should observe the geographical situation of the country where the events took place, its latitude and longitude, climate, the countries adjoining, &c.; and we should ascertain the chronology of the events, and observe what was passing at the same time in the countries with which the country under consideration had intercourse. We should also remark what is the religion of the people, and its particular ceremonies. And we should observe the form of government, whether monarchical, aristocratical, or democratical, or mixed; and in what way it is administered, whether generally by priests, soldiers, or civilians. We shall have occasion to speak further of history, in the next part of our work.

III. Every principle of reasoning will give rise to descriptions. The relation of subject and attributes supplied the descriptions we have given at page 33. The relation of a whole and its parts sometimes will also give rise to descriptive reasoning: the description consists in the enumeration of all the parts that compose the whole. Thus Job describes his former prosperity (Job xxix. 7—17). The punishment of the wicked is described with the same minuteness. (See Job xxi. 17—20; xxvii. 13—23; and xviii. 5—21.) The relation of genus and species also gives rise to descriptive reasoning. The description consists in the enumeration of the species. Thus Job describes the various kinds of wrongs perpetrated by wicked men (Job xxiv. 1—12). And we have also an enumeration of the various kinds of blessings bestowed on the righteous (Job xxii. 23—29). The relation of cause and effect also is a source of description. The description is usually a portraiture of the effect. Examples are narratives, and are descriptions of past events. (See the Section on Examples.) Analogies, comparisons, and contrasts are sometimes formed by lengthened descriptions. (See Job iv. 3—5; xiv. 7—10.) Thus Job contrasts his prosperity (xxix. 7—25) with his adversity (xxx. 1—31).

Parables, fables, and allegories are, of course, descriptions. (See Psalms lxxx. 8—14.) In Sacred poetry we often find that descriptions are given in the form of interrogations. We have examples of this frequently in the Psalms and the Prophets, and more especially in the thirty-eighth and thirty-ninth chapters of the Book of Job.

Descriptions are sometimes rendered more vivid by the use of that figure of rhetoric which is called amplification. This is often used in describing moral effects. All the circumstances are mentioned, and placed in such a way that the impression shall increase as you proceed, and end in a climax. Thus it has been stated, that in London one thousand young men die every year of consumption, in consequence of their late hours of employment. Dr. Hamilton, in a sermon on the subject, thus amplifies the statement:—

"When a physician tells you that a thousand young men die every year of consumption, caused by the shop-system of the capital, the statement makes little impression. It is a statistical fact, and makes no appeal to the feelings. But what does it imply? It means, that in consequence of this system, if they all be collected in one consumption hospital, a thousand young men are stricken down before the prime of life, with incurable and lingering disease. It means, that at the period of existence when the pulse should be the firmest, and the zest of life the fullest, a thousand youths are wasting away in racking pain, and in the dreariness and dejection of hopeless invalidism. It means, that when the yearly battle of competition is ended, trade buries a thousand of its soldiers, and votes no pensions to the widows, whom it has bereft of sons, or the sisters, whom it has robbed of brothers. It means, that a thousand graves are digged and filled, and that, in these graves are entombed the hopes of many a family. It means, what statistics cannot tell; it means—this list of a thousand untimely deaths—it means misery and mourning, blasted prospects, broken hearts, desolate homes, and (it is to be feared, sometimes) the forfeited hope of heaven."

In the same way the apprehension of a fugitive slave is thus described in a newspaper called the *New York Independent*:—

"Last week, on Wednesday, an honest and intelligent man, guilty of no crime, who had peacefully supported himself by his industry and economy in this city for two years past, to whom

life was as dear and liberty as sweet as to any of us, was taken by an officer of the United States Government, under the order of another officer of the same Government, and consigned to a bondage in the comparison of which no temporary imprisonment would be other than insignificant; to a bondage that puts him completely at the disposal of an irresponsible master; that denies him the right to wife or children, except so long as the master allows; that deprives him of property, of liberty, and of the Bible; that makes him a chattel to be sold at will, and dooms him to labour through life for another. He is to be 'sold South,' it is said, that his chance of again escaping may thereby be diminished; and the fearful probability is, that he will never again taste the sweetness of freedom. The rest of his years must be spent under oppression. It is the United States Government that has done this; the Government which represents the citizens of the North as well as of the South; and for which we all together are responsible. Because this man was poor and oppressed from his birth—because his every faculty of body and of mind has been thus far through his life used by another without return—because the master, in concert with others, has passed a law that he shall work thus hereafter—therefore he is forced back to this bondage, after having escaped it."

Dr. A. Read, in a sermon on the establishment of a Catholic Hierarchy in England, thus describes the religion of the Church of Rome:—

"The evil which threatens us is Popery; and it is the greatest under which a people can suffer. If this should be thought exaggeration, my reply still is, that the subject is incapable of exaggeration. It is said of one poison, that it is the essence of all other poison: and as truly may it be said of Popery, that it is an evil comprehending all other evil. It is proverbial to say, that the worst things we know are formed from the corruption of the best: and Popery is the great example. It has taken the true religion, and blotted out its heavenly image and superscription; and perverted it to the uses of intolerance, ignorance, and idolatry. It has preferred tradition to truth, the Liturgy to the Scripture, the altar to the pulpit, the Virgin to Christ, and the priest above all. By depriving us of personal responsibility, it has enslaved the understanding, perverted the conscience, and left us less than men. By penance it has superseded repentance; by indulgence, it has given licence to sin; by the confessional, it has wormed itself into the secrets of families, and destroyed their confidence and peace; and by its histrionic exhibitions and pantomime, it has converted the temple of God into a play-house and a toy-shop! It has sealed the Book of Knowledge; it has

poisoned the waters of life; it has made religion to be thought a trade, and reduced thinking men to infidelity! It is fatal, and must be fatal, as a system, to every interest of humanity, whether personal, social, or national; and can only succeed, as it treads in the dust every thing for which it is worth while to live, to labour, or to pray!"

Moral descriptions are sometimes given in the form of personification.

"Happy is the man that findeth wisdom, and the man that getteth understanding. For the merchandise of it is better than the merchandise of silver, and the gain thereof than fine gold. She is more precious than rubies: and all the things thou canst desire are not to be compared unto her. Length of days is in her right hand; and in her left hand riches and honour. Her ways are ways of pleasantness, and all her paths are peace."—*Prov.* iii. 13—17.

"The objects of war and of commerce are the same; that is, to obtain possession of what we do not possess. But though the object is the same, the means are different. War exclaims: 'See! the people of yonder country have comforts and luxuries which our country does not produce; we are stronger than they, let us go and kill them, and take their country for ourselves.' 'No!' says Commerce, 'while their country produces commodities which ours does not, our country produces commodities which theirs does not; let us then take some of the commodities of which we have a greater abundance than we need, and offer them in exchange for those commodities we wish to acquire. By this course we shall avoid the guilt of a quarrel, and the danger of a defeat; we shall obtain an ample supply of all the enjoyments we need; and we shall promote the happiness of other nations as well as our own.'"—*Lectures on Ancient Commerce.*

As examples of a description of a peculiar kind, I now give you copies of some advertisements of the late Mr. George Robins. He was remarkable for the mode in which he described those properties which, as auctioneer, he was entrusted to sell. They are curious, even if viewed only as specimens of his professional ingenuity. They are still more interesting if regarded as a satire on that florid style of description in which some authors are apt to indulge.

The Colosseum, in the Regent's Park,

"Mr. George Robins respectfully makes known to all those who would speculate where risk appears so far removed, that he

is directed to offer by public competition, at the Auction Mart, London, on Thursday, April 27, at 12, the Colosseum, in the Regent's Park. Fortunately this Cyclopean structure has acquired a fame that relieves the individual who is honoured by the direction of the sale from the necessity to exert his inventive faculties, or to give a lengthened description of its prominent features. It may suffice for the present to say, the Colosseum is the most classical building throughout Europe; where description fails to portray

'Its eloquent proportions,
Its mighty graduations,'

which even when seen,

'Thou seest not all, but piecemeal thou must break,
To separate contemplation, the great whole.

The dome, it is believed, is of larger dimensions than any other of a similar nature, being

'To art a model—
Simple, erect, severe, austere, sublime,
It looks tranquillity.'

The most celebrated construction of antiquity does not surpass the gigantic elegance of this building. The solidity of this enormous mass of classic architecture is equal to its colossal dimensions, and is calculated to stand the rigid test of time.

'Glorious dome,
Shalt thou not last?'

This mighty labour, the modern Babylon, has secured for many years an income varying from £3,000 to £5,000 a-year, without the slightest artificial aid, and it is placed beyond doubt that in the hands of a talented and ingenious possessor this income will be in due time greatly increased. The picture of London has been its great feature, and 2,800 persons have paid for their admission in one day. There are magnificent conservatories, fountains, and jets d'eau, a Swiss cottage with its lakes and woods, a hall of mirrors, and an extensive theatre, together with a large frontage in Albany-street. It needs only the magic influence of Stanfield's pencil to place it high above all contemporaries. The tenure may be assimilated to freehold, inasmuch as the ground rent is a mere bagatelle, and the lease from the Crown hath 70 years still unexpired. Descriptive particulars will be ready a month antecedent to the sale; in the meantime principals may obtain information from Messrs. Fladgate, Young, and Jackson, solicitors, Essex-street, Strand; and at Mr. George Robins's offices, Covent-garden. It is open as usual, or it can be seen by tickets, to be procured at Mr. George Robins's offices, at 1*s.* each, or cards for four persons at 2*s.* 6*d.*"—*Times.*

"The entire islands of Rasay and Rona, in Scotland, exceeding 18,000 acres, let in 22 farms, with a first-rate residence, offices, and grounds: lots of sporting, and minerals without end.

"Mr. George Robins has the pleasure to announce that he is authorized to sell by auction, at the Mart, London, on Thursday, Oct. 19, at 12, in one lot, the highly important freehold estates, in Scotland, of John M'Leod, Esq.; comprehending the islands of Rasay and Rona, in the Western Hebrides, two miles from the island of Skye and eight from the main land. The two islands exceed 18,000 acres. The splendid edifice stands upon Rasay; it is called Kirktown from its vicinity to the church, is of recent elevation, large and commodious, with offices, prolific gardens, and extensive pleasure-grounds, with all the accommodation a nobleman can desire. The lands are beautifully timbered, and to a sporting gentleman the advantages are beyond all praise. The domain is adorned by several lochs of great extent, abounding in trout, and the magnificent scenery is varied by numberless romantic glens. The very picturesque structure of Brochel Castle, the ancient seat of Macleod of Rasay, is one of the leading features on the estate. It covers the whole summit of the bold eminence on which it stands, its massive walls being continuous with the precipitous faces of the rock, which are so likened to the masonry of which it is constructed, that it is difficult to distinguish between the artificial and natural wall. Here the proud outlines of the cliffs decline by a general declivity, terminating in low shores interwoven with grassy slopes. Rasay is covered with scattered farms. On one side scenes of considerable grandeur are presented, marked by simplicity of manner and powerful effect, at times assuming an artificial character in their architectural regularity, rising like majestic towers above the deep dark sea that washes their bases. The houses perched on these lofty summits seem more like the retreats of the birds that hover round them than the habitations of human beings, the admiring eye from below scarcely distinguishing them, far less their inhabitants. Grouse and blackcock in countless numbers, and other game is equally abundant. The land, capable at very little expense of being cultivated, amounts to 2,800 acres, and that which is in cultivation, extending to 1,958 acres, could be made to produce double the quantity of crop at present raised. 5,000 acres may be available for good crops in two years. The islands abound in granite. The rock lies open, and could be easily quarried and conveniently shipped. The island is nearly three miles in length, and at the top of the rock lie two seams of iron-stone, extending over a surface of three square miles The revenue received and derivable, under a healthy course of

management, will be most considerable, and rendered still more certain if Mr. Robins is so fortunate as to come in contact with a nobleman gifted with a brain farm, who has the good taste to admire the beauteous scenery which is developed at every turn, and the romantic country which encircles the two islands. Such a gentleman, with a suitable independence, and a taste for everything that is unsurpassable in Europe, will do well to give to this property his immediate time and attention. Particulars, with plans, and a view of the mansion, may be had 21 days before the sale, at the Auction Mart; and at Mr. George Robins's offices, Covent-garden. The printed particulars of sale will enter much more minutely into detail, and give a faithful report of its present and its prospective advantages. To a sporting man of independence there is nothing to approach these islands." —*Times.*

IV. The following are practical applications of descriptive reasoning.

In tracing the effects of any measure that we wish to have altered or abandoned, the effects are sometimes described very minutely:—

"The reasons against extracting a revenue out of soap are obvious and unanswerable. In the first place, it is a tax upon a necessary of life. Moreover, it presses on the poor in a disproportionate degree as compared with the rich, since, the duty being uniform on all descriptions of the article, the commoner qualities pay of course a much larger per centage to the Exchequer than those of higher price. But the particular mode in which this duty affects the humbler classes, makes it especially injurious to their interests. It operates as a discouragement to cleanliness—a premium *pro tanto* upon dirt and disease. To enhance, by fiscal regulations, the price of a commodity which is indispensable to the purification of the dwellings, the apparel, and the persons of the poor, is, to say the least, a glaring contravention of the policy which has but lately taken the health of the people under legislative protection, and which regards baths and washhouses, drainage and ventilation, as fit objects of public care and official supervision."

"But we have not yet done with the evils of the soap tax. Another well-founded objection against it is, that it operates, like all Excise duties on articles of manufacture, injuriously upon production—exposing us to a disadvantageous rivalry with the foreign maker, and depressing what might otherwise be a flourishing branch of trade. The same arguments, in fact, which induced Sir R. Peel to take off the glass duties, might be urged with

almost the same force for repealing the duty upon soap. Lastly, to complete the case of inexpediency, the tax to which we refer does not extend to Ireland; a preference not only indefensible on grounds of justice, but furthermore conducive, as is well known, to a great amount of evasion and fraud. It has been a common practice to export English soap, with the benefit of the drawback, to the sister-country, and afterwards to smuggle the same back again to England, thus defrauding at once the revenue and the manufacturer who honestly pays the duty."—*Morning Chronicle.*

In describing acts of injustice or oppression, it is seldom necessary to have recourse to any forms of reasoning. The description itself will usually in this country produce all the impression that could be obtained by the most profound argumentation. So also, in regard to the abuses of the law, to show that they ought to be corrected, it is enough to describe them :—

"A. has an estate left to his wife, with remainder to her children upon her death. B., the executor, being about to sell some of the houses and lands, for the purpose of satisfying debts due from the testator, A., believing that sufficient assets were in B.'s hands to meet the demands upon the estate, files a bill in Chancery for an account. This was in 1833. B. puts in answers —the bill is amended, and amended answers follow. In 1835 A.'s wife bears a child. The Lord Chancellor insists upon the infant being brought into court. The suit is 'abated'—a supplemental bill has to be filed, making the infant a plaintiff, and all the other parties have again to put in answers. The child, however, dies a few weeks after birth. A. has then to take out letters of administration to the estate of the deceased infant, and to file another supplemental bill, demanding another edition of answers. In 1836 A.'s wife bears him a second child, which has to be presented in court. This babe also dies, and all the formalities necessary in the former case are repeated in this. In 1838 another child is born to A., and the whole process has to be gone through again; and in 1840 a fourth child, and the necessary Chancery consequences. In 1841, one of the executors dies, when another supplemental bill has to be filed, and all parties interested to put in their answers. After this occurs a bankruptcy, when there is another repetition of the whole case. It comes at last before the Lord Chancellor for a hearing, who decrees to refer it to the Master, 'to take the accounts in the usual way.' Twelve months are consumed in drawing up the decree—five years in going through the accounts, which might have been gone through in five hours—and, at last, a re-hearing of the suit

is reached. The Master's report is given in, the Court confirms it, and makes a decree, that the estates shall be sold to pay the costs, the balance, IF ANY, to be paid into the Bank, '*to await the further directions of the Court.*' The minutes of the decree, however, have to be settled by counsel, who spend over them two years more. Meanwhile, another bankruptcy occurs—the process has again to be gone through. The case is not yet ended, and costs considerably more than half the original legacy have already been incurred."—*Nonconformist.*

V. A logical description will have an adaptation to the points it is designed to prove. Thus, the description of a town by a physician, an architect, a political economist, or a clergyman, will probably have a reference to its healthfulness, its buildings, its manufacture, or its spiritual destitution, and hence the descriptions, though all correct, will be different from each other. Logical descriptions should not be too long. Dr. Young observes in his Paraphrase on the Book of Job, that the description of an object is complete, when you can add nothing but what is common to other objects. Hence we read in that poem, of the beauty of the peacock, the migration of the hawk, the swiftness of the ostrich, and the sharp-sightedness of the eagle, these being the main points by which they are respectively distinguished.

If my reader is a young man who is desirous of becoming a public speaker, he should begin by trying his hand at description, not by writing, but by speaking. Let him read over one by one the descriptions he will find in this section. Then let him shut the book and give the description in his own words. He must not speak too fast, nor turn back to correct his language. When he can do this readily, he may proceed in the same way with some of the pieces of reasoning, not learning them off by heart, but speaking the substance in his own words. At first, he may do this sitting down, then standing up, and afterwards, if so disposed, before a looking-glass. But he had better keep this matter to himself, or silly people will laugh at him, and 'tis not pleasant to be laughed at even by those whose judgment we do not respect.

In descriptive reasoning, all the reasoning is in the mind. There is no reasoning process manifest in the de-

scription. But though no reasoning is required to prove the truth of the description, there is still a reasoning process going on in the mind. It is admitted, for example, that the eye is correctly described. The only reasoning in the mind is whether this description is a proof of an intelligent maker. When you have finished your description, you have proved your proposition. For the other part of the argument, that an instrument so constructed must have had an intelligent maker, is a "truth of intellect," that requires not to be proved by reasoning.

There are two cases in which descriptions may lead us to erroneous conclusions.

The first is when the description is incorrect. A friend who recommends a servant, may give an incorrect, or at least, a defective account of his character. A party who wishes to sell us an estate, may give a description that shall prepossess us too strongly in its favour. Or a traveller into a foreign country, may give a description either of the scenery or of the inhabitants, that shall lead us into false judgments either in regard to the conveniences of the country, or the character of its inhabitants.

In the second place, the description may be correct, and hence we may too readily embrace the reasoning with which it is connected. How often have we heard vivid, and probably correct descriptions of the misery of Ireland! But the accuracy of the description was no proof that the specific measure which the speaker proposed would relieve that misery. An honourable member may correctly enough describe the inconveniences of an existing law, but this is no proof that the remedy he proposes would remove the inconveniences, or that it would not introduce more weighty evils. So we may sometimes have appeals to our charity, made on behalf of people in great distress, but the relief solicited might have the effect of increasing the misery it is intended to relieve. A talent for vivid description is a great advantage to a public speaker. But we should always recollect that the description is only half the argument, and like the half of a pair of scissors, will be quite inoperative unless well united to the other half.

I shall now close this section by a beautiful example

of descriptive reasoning, taken from Evelyn's History of Religion:—

"Then turn your eyes to the enamelled grass, and read God on every flower; see and admire their uniformity, beauty, colour, variety, perfume, virtue, which who could give them but an infinitely wise and glorious Being? Is it possible to contemplate the single production of one of these, without astonishment and hymns of praise? Whilst the head and root of all this flowery beauty is hid and buried in squalid mud, enduring all the severities of weather, and even emerging out of rottenness into that ravishing variety of shape, tincture, odour, qualities and operations! The cocoa alone is a miraculous instance, fitted for all human uses, meat, drink, clothing, shelter, and a thousand other conveniences!

"Who but the Physician of Souls were able to enumerate the virtues and effects of the vegetable kingdom. The various sorts of apples, pears, cherries, apricots, peaches, nectarines, plums, grapes, and smaller berries; the orange, lemon, fig, granate, melon, sugar-cane; and all these, even in one alone, the royal pine—a compendium of all that is delicious to the taste and smell. That from so weak, despicable, and useless stem as what supports the vine, planted among the rocks and pumices, such variety of delicious and tempting juices should flow! corn to strengthen, and wine to comfort the heart of man, and oil to make him a cheerful countenance! . . . . In deserts lurk the spotted leopard, the swift tiger, indomitable panther, bears, wolves, and foxes; and those most in the colder climates, affording furs and skins. The wild boar is in the forest, the squirrels on the trees, the faithful and watchful dog domestic, the mimicking apes divert us; and above all these, for strength, are the lions, seeking their meat of God; and so do the young ravens that call upon Him—the towering eagles, hawks, and birds of prey; the loquacious parrot, the sagacious crane, pious stork, architectress swallow, chaste dove, warbling nightingale, glorious peacock, thrushes, linnets, canaries, and other singing birds, their wonderful notes, nidifications, trains, and plumage.

"These, and infinite more, are fed with flesh, grain, fruits, flies, of which latter there is stupendous variety, for shape, colour, and contrivance; consider but the strength of the minutest gnat, piercing with his invisible dart the thickest skin, and drawing blood through his proboscis; hear his trumpet, sounding from so small a pipe: for him lies in wait the subtle spider, displaying her nets for the surprise. From the wise serpent to the crawling worm, they are all endowed with wonderful instincts, to propagate, defend, and preserve themselves; nor is there among them the least mite or pepper-worm (that dust of a creature whereof

50,000 are contained in one drop) but is for food to some other creature; and we extract antidotes out of vipers, and sanative remedies from the poisonous cantharides.

"What shall we say of the monarchical bee, and the dulcet elixir she so industriously gathers and stives in her admirably contrived and waxen city; the government of her numerous subjects: or, again, the order and economy of the little ant, to which Solomon sends the sluggard? Can we look on the laborious silk-worm from an egg no bigger than a grain of sand, through all its wonderful changes, life, death, sepulchre, and resurrection, without astonishment! how, with her tender web, she clothes the proudest potentate, and without whose spoils the height of their glory would be but from the common fleece, which covers the beggar as warm as the king."

Thence he proceeds to man himself:—

"Consider we, first, the structure of his body, upright stature, majesty, charming countenance, ravishing eyes, and variety of features. Let us search within his head for the seat of his superior faculties. That so fluid and unlikely a substance, placed in the several cells, should pretend to the residence of his sense, reason, memory, imagination; and be the shop and magazine of those wonderful ideas. The velocity of the motion, which carries its mandate over the rest of the body, even to the most distant members, in a moment of time; and retaining so many different notions of things, figures, persons, places, and be able to reposite and draw forth for use and in order; and then to express his mind by articulate sounds and eloquent speech, for society, conversation, and the praise of his Maker; and all these faculties contained in so small a fortress as the head, is plainly miraculous. Let us consider how these several senses, sent out by the soul to speculate abroad, report what they find, by the central touches and perceptive notices darted from every atom, and the surface of various objects, on the exquisitely fine, innumerable, and universally dispersed nerves and membranes that invest them; whose root is in the brain, where (as we said) all our conceptions are forged, our appetites and passions excited and regulated."—*Evelyn's History of Religion.*

SECTION II.

INTERROGATIVE REASONING.

By Interrogative Reasoning we mean reasoning by asking questions. Dr. Young observes, in his Paraphrase of the Book of Job, that an interrogation differs from an ordinary argument as much as telling a man to hang himself differs from a common execution. By putting an appropriate question, you compel the party to pass sentence on himself.

Sometimes interrogation is employed for the purpose of more emphatic assertion, and often gives much additional force to the expression. Thus: "King Agrippa, believest thou the prophets? I know that thou believest"—is more forcible than "King Agrippa, I know that thou believest the prophets." "Is he the God of the Jews only? Is he not also of the Gentiles? Yes, of the Gentiles also." This is more forcible than "He is not only the God of the Jews, but also of the Gentiles." (See also Jer. xlvii. 67.

Interrogation is the proper language of majesty incensed. The thirty-eighth chapter of the Book of Job commences thus. (See Job xxxviii. 1—7; Ezek. xviii. 23—25.)

It is also the language of compassionate reproof. (Hosea xi. 8; vi. 4.)

It is also the language of wonder and adoration. (See Job xi. 7—9; Isaiah xl. 12—14.)

It is also the language of fervent importunity. (Psalms lxxvii. 7—10; lxxxviii. 10—14; lxxxix. 46—49.

Interrogation is sometimes employed, as we have intimated in the last Section, to give a more vivid description. (See Isaiah lviii. 3—10; lxiii. 1—4; Matt. xi. 7—9.)

But we are more particularly to observe the use of questions as employed in reasoning.

Interrogative reasoning is of various kinds.

1. The first kind is the Socratical form of reasoning.

The following description of it is taken from Dr. Watts's "Improvement of the Mind:"—

"THE SOCRATICAL WAY OF DISPUTATION.—This method of dispute derives its name from Socrates, by whom it was practised, and by other philosophers in his age, long before Aristotle invented the particular forms of syllogism in mood and figure, which are now used in scholastic disputations.

"The Socratical way is managed by questions and answers, in such a manner as this, viz. if I would lead a person into the belief of a heaven and a hell, or a future state of rewards and punishments, I might begin in some such manner of inquiry, and suppose the most obvious and easy answers.

"*Quest.* Does not God govern the world?

"*Ans.* Surely he that made it governs it.

"*Q.* Is not God both a good and righteous governor?

"*A.* Both these characters doubtless belong to him.

"*Q.* What is the true notion of a good and righteous governor?

"*A.* That he punishes the wicked, and rewards the good.

"*Q.* Are the good always rewarded in this life?

"*A.* No, surely; for many virtuous men are miserable here, and greatly afflicted.

"*Q.* Are the wicked always punished in this life?

"*A.* No, certainly; for many of them live without sorrow, and some of the vilest of men are often raised to great riches and honour.

"*Q.* Wherein then doth God make it appear that he is good and righteous?

"*A.* I own there is but little appearance of it on earth.

"*Q.* Will there not be a time when the tables shall be turned, and the scene of things changed, since God governs mankind righteously?

"*A.* Doubtless there must be a proper time, wherein God will make that goodness and that righteousness to appear.

"*Q.* If this be not before their death, how can it be done?

"*A.* I can think of no other way but by supposing man to have some existence after this life.

"*Q.* Are you not convinced, then, that there must be a state of reward and punishment after death?

"*A.* Yes, surely; I now see plainly that the goodness and righteousness of God, as governor of the world, necessarily require it.

"Now the advantages of this method are very considerable.

"It represents the form of a dialogue, or common conversation, which is much more easy, more pleasant, and a more sprightly way of instruction, and more fit to excite the attention, and sharpen the penetration of the learner, than solitary reading, or silent attention to a lecture. Man being a sociable creature, delights more in conversation, and learns better this way, if it could always be wisely and happily practised.

"This method hath something very obliging in it, and carries a very humble and condescending air, when he that instructs seems to be the inquirer, and seeks information from him who learns.

"It leads the learner into the knowledge of truth as it were by his own invention, which is a very pleasing thing to human nature; and by questions pertinently and artificially proposed, it does as effectually draw him on to discover his own mistakes, which he is much more easily persuaded to relinquish when he seems to have discovered them himself.

"It is managed in a great measure in the form of the most easy reasoning, always arising from something asserted or known in the foregoing answer, and so proceeding to inquire something unknown in the following question, which again makes way for the next answer. Now such an exercise is very alluring and entertaining to the understanding, while its own reasoning powers are all along employed, and that without labour or difficulty, because the querist finds out and proposes all the intermediate ideas or middle terms."

2. The second kind of interrogative reasoning is the catechetical form.

Dr. Watts intimates that the Socratical mode of disputation might be introduced into catechisms for the instruction of children; and Mrs. Marcet seems to have followed this form of reasoning in some of her interesting "Conversations." We take the following quotation from her "Willy's Grammar:"—

"*Lesson IV.*—The following morning Willy came into the school-room with his grammar in his hand as usual. 'What am I to learn to-day, sir?' said he; 'I begin to like my grammar; especially now that there are stories belonging to it.'

"'I am very glad to hear it,' observed Mr. Thompson; 'to-day you shall learn what an *adjective* is.'

"'Pray explain it, sir, for it is a very hard word.'

"'Let us see first what the grammar says about it, Willy;' and he read,—'"An adjective is a word added to a noun, to express its quality; as, a *good* child, a *wise* man."'

"'Oh, but sir, I do not know what "to express its quality" means: you must tell me all about it, or I shall never understand it.'

"'Quality,' replied Mr. Thompson, 'means *the sort of thing.* Tell me what sort of a table this is.'

"Willy, after looking at the table a few seconds, said, 'It is a round table.'

"'Well, then *round* is an adjective, because it points out the quality of the table.'

"'But it has other qualities, sir; it is a large table; is *large* an adjective too?'

"'Yes, every word added to a noun which expresses a quality is an adjective.'

"'If that is all, an adjective is not half so difficult as I thought; I dare say that I can find out some more adjectives for the table. Let me think a little: it is a wooden table; so *wooden* must be an adjective; then it is a pretty table, and *pretty* must also be an adjective; besides, it is an *old* table, for it has been in the room, I believe, before I was born. I can't think of any more adjectives for the table,' said Willy; and, starting up suddenly to look at a bird that flew across the window, he upset an inkstand which stood upon the table. At first he was frightened, thinking he had broken it, but finding he had only spilled some of the ink, he said, 'Oh, sir, it is only another adjective for the table; for now,' added he, 'it is a *dirty* table.' Then taking a piece of blotting-paper, he soaked up the ink, and wiping the table carefully, said, 'And now it is a *clean* table.'

"'You have gained two adjectives for the table,' said Mr. Thompson, 'and one for yourself.'

"'One for me, sir? what is that?'

"'Do not you think that you are an *awkward* child, to have overset the inkstand?'

"'Yes; but, then, I am a *tidy* one, for having wiped the table *clean;* so there is another adjective for me. But, sir, this other table has different adjectives; for it is *square* and *small,* not *round* and *large,* like the other.'"—*Mrs. Marcet.*

Catechisms, as they are generally constructed, are not pieces of interrogative reasoning. The question merely asks for information what is supplied by the answer. They do not, therefore, come under our present notice. I may observe that in the catechisms of the Wesleyan Methodists the answer to each question is put in the form of a complete proposition embodying the entire sense of both the question and the answer. Thus: "How many sacraments hath Christ ordained in his Church? *Christ hath ordained two sacraments in his Church,* Baptism and the Lord's Supper."

3. Sometimes we ask questions in order to answer them with the view of removing from the discussion the topics to which they refer. Thus a writer on agricultural distress commences with questions in the form of inquiries to which he replies:—

"There is no denial, and there can be no doubt, that the whole agriculture of England is menaced at this moment with ruin. . . . But what is the cause? Has Heaven stricken the land with barrenness?—the late harvest has been remarkably productive. Has the land been trampled by insurrection?—it has exhibited a contrast to all Europe in its tranquillity. Has commercial failure driven away its credit?—the panic of 1847 has virtually invigorated, by purifying, speculation. Has the country been stripped of its coin?—fifteen millions of bullion are lying in the cellars of the Bank, Consols are at 96, a Russian loan of five millions is taken up in five hours, and the grand difficulty of moneyed life now is to know what to do with money . . . . Again we ask, what is the cause? The cause is simply this," &c.—*Britannia.*

The following address, delivered some years ago at the formation of a Mechanics' Institution, contains a good many interrogations:—

"This evening, for the first time in the history of Mechanics' Institutions, they had been attacked in a public meeting. It was

said that by these institutions we should raise mechanics above their station by inspiring them with pride, and that we were acting inconsistently with the character of man. Now, what was the foundation of pride? was it not founded on real or fancied personal distinction? If in a village there is only one man who can read and write, he is regarded as a superior; he is a king in the village; a consciousness of his superiority will very probably introduce a spirit of pride. How shall we destroy that man's pride? let us make every other man in the village as learned as he. It is partial, not universal, education that produces pride; no man will be proud of his education when education is no longer a distinction. In what way are our institutions inconsistent with the character of man? Is not man an intellectual being? Is it not in this that he is principally distinguished from the brute creation? Though inferior to many other animals in the greatness of his stature, in the strength of his muscles, in the acuteness of his senses, and in the fleetness of his motions, yet what does he not effect? The beasts of the field cannot resist his power, nor can the birds of the air fly beyond his reach. The valleys are clothed with verdure, and the plains abound with corn, the result of his industry; lofty mansions and splendid edifices, magnificent domes and aspiring columns rise at his command: even the ocean, the most terrific of all the works of God, places no barrier to the exertions of man. He removes the forests from their seats, he constructs a habitation adapted to the watery element, he compels the stars to be his guide, he yokes the winds to his car, and wafts himself to every corner of the world. To what but to the cultivation of his intellectual powers was man indebted for the production of these prodigious effects? What is it but this which raised the civilized man as far above the savage as the savage is above the brute? When endowed with such powers, would it not be base ingratitude to the Being by whom they were bestowed, were we to neglect their cultivation? And when we see other men endowed with similar powers, would it not be unwise policy, and hard-hearted cruelty, to withhold from them the means of improvement? We find the mechanics, like other men, possess intellectual faculties—we aim to improve them; they have a desire for knowledge—we wish to gratify it; they have a faculty of invention—we wish to give it full scope, and to employ its energies for the public good. How then do we act inconsistently with the character of man? Again, man has a desire for happiness, a fondness for recreation; even the habit of industry is strengthened by amusing the mind during the intervals of labour by pleasing relaxation. To an intellectual being what pleasures are so great as those which are intellectual? Could it be proved that from this moment to the end of time no one instance would occur of any mechanic becoming a better

workman, or receiving higher wages, or being raised to a superior situation—that no one instance would occur of any new discovery being made in the mechanical arts—that no one instance would occur of any mechanic being improved either in intellect or in morals—by means of these institutions—they might still be justly defended as public amusements. And is this nothing? Is it nothing to unlock a new source of pleasure to so large a class of men as the working mechanics? If we could not increase the sum of national wealth, would it be nothing to increase the sum of national happiness? And what amusements can be more proper than those which we supply? If they required strong bodily exertions—like the athletic exercises; if they brutalised the character like dog-fighting, and badger-baiting, and pugilistic contests—if they took the mechanic a distance from his home, and compelled him to keep late hours like the diversions of the theatre—if they occasioned tumults and disorders, like the revelries of public fairs—if they occasioned ill-will and quarrelling, like cards and all manner of gambling—if they produced feebleness and languor, and an incapacity for the next day's work, like the engagements of the tap-room—if such were the effects of Mechanics' Institutions, with what clamorous accusations would they be assailed? But no such charges have ever been advanced. If then every other amusement has its patrons and defenders, are we wrong in patronizing a new kind of amusement? One which, while it answers the end of all amusements, that of affording a pleasing recreation, is free from the objections to which other amusements are exposed? This amusement, too, is superior to all others in that it is adapted to every age—it does not cloy by repetition; and, what is of importance to a labouring man, it can be obtained at a much less expense. Will it be said that mechanics have no capacity for this intellectual pleasure—that their faculties are too gross to comprehend this refined enjoyment? Where is the proof of this assertion? Is not the child of a mechanic, when first introduced into the world, as perfect both in body and mind as the child of a nobleman? And is he not less likely to have his faculties blunted by a voluptuous education? And do not the crowds which throng our Mechanics' Institutions prove that their desire of knowledge is equally strong?" * * * *—*The Author.*

4: Sometimes we place in the form of questions those objections which our opponents might advance against us. St. Paul often reasons in this way. See the third, fourth, sixth, seventh, eighth, ninth, and eleventh chapters of the Romans.

"It is much to be regretted that people who have realized a

little money by trade should retire and take out their capital, and thus reduce the commercial capital of the country. What reason can you assign for this? Do you say you are independent? Go on, get wealthy. Do you say you are wealthy? Go and get more wealth. The more wealth you get, the more you serve your country, and the greater power you have of doing good to others. Do you say you are getting old? Take a young partner: do you find capital and knowledge, and let him find labour and activity. Do you say you have toiled long enough; you wish to retire and enjoy yourself? Retirement will be no enjoyment to you: to a man of your active habits, solitude and idleness will have no charms. The most effectual means you can adopt to make yourself wretched, and to shorten your days, will be to place yourself in a situation where you will have nothing to do. But do you say, you think it will be more respectable to be out of business—to have an establishment like a nobleman—and to introduce your sons and daughters into fashionable society? Oh, if that is the reason, by all means go: if you have become so high that you look down upon your business, the sooner you leave it the better. I have now nothing more to say to you."—*Lectures on Ancient Commerce.*

5. The relation of cause and effect is often intimated by interrogations. When a wrong cause, as we think, has been assigned for an effect, and we desire to intimate the true cause, we can do this by asking questions.

"One man pines under a broken constitution. But let us ask him, whether he can, fairly and honestly, assign no cause for this, but the unknown decree of heaven? Has he duly valued the blessing of health, and always observed the rules of virtue and sobriety? Has he been moderate in his life, and temperate in all his pleasures? If now he is only paying the price of his former, perhaps his forgotten indulgences, has he any title to complain as if he were suffering unjustly? .... But you, perhaps, complain of hardships of another kind—of the injustice of the world; of the poverty which you suffer, and the discouragements under which you labour; of the crosses and disappointments of which your life has been doomed to be full. Before you give too much scope to your discontent, let me desire you to reflect impartially upon your past train of life. Has not sloth, or pride, or ill temper, or sinful passions, misled you often from the path of sound and wise conduct? Have you not been wanting to yourselves, in improving those opportunities which Providence offered you, for bettering and advancing your state? If you have chosen to indulge your humour, or your taste, in the gratification of indolence or pleasure, can you complain, because others, in preference to you,

have obtained those advantages which naturally belong to useful labours, and honourable pursuits? Have not the consequences of some false steps, into which your passions, or your pleasures, have betrayed you, pursued you through much of your life; tainted, perhaps, your characters, involved you in embarrassments, or sunk you into neglect?"—*Anon.*

6. Points of comparison are often brought forward by questions.

"There is no country upon earth whose inhabitants have a juster right to boast of their social progress. In what country beside do you find, I will not say a greater, where do you find an equal degree of civil, political, and religious freedom? Where do you find a system of jurisprudence more wisely contrived, or more impartially administered? Where do you find power more nicely balanced, or subjection more cheerfully rendered? Where do you find a greater respect for the laws, or a more perfect union of all classes to maintain the supremacy of legitimate authority? Where else is there a stricter regard felt for the rights of all classes? Where is there more of practical effort to mitigate the woes of human life, in all their diversified forms?—nobler, more expansive, and further-reaching endeavour to ameliorate the physical and the moral condition of humanity? Where does there exist greater security of person, property, life, and limb? Where do you discover finer safeguards for public morality? more efficient measures to detect or repress crime? Take and compare England with any other civilized nation upon the face of the globe, in all these respects, and I venture to affirm that the comparison will serve to place in bolder relief her own surpassing preeminence."—*Bickersteth's National Obligation to the Bible.*

7. Arguments from analogy, and more especially *à fortiori* arguments, are expressed in an interrogative form:—

"Why should there be all these difficulties about the letting or selling an estate or a piece of land?—difficulties common to England and Ireland, but felt in Ireland more severely than in England, from a difference of practice prevailing between landlord and tenant. If a merchant goes into a linen or a cloth hall to purchase goods to the amount of several thousands of pounds, he does not find it necessary to employ a lawyer to examine the rights of the merchant from whom he buys it, to its possession, and back from one owner to another, until he finds that the seller of the raw material came by it legally, not to say honestly. Why should there not be the same facility in selling a piece of land as

in selling a steam-engine or a piece of cloth? Why should land be protected more than tallow, cotton, wool, or other merchandise?"—*Irish paper.*

When we reprove any inconsistency in the opinions or the conduct of the party we address, we often do it in the form of inquiry:—

"But when I saw that they walked not uprightly according to the truth of the gospel, I said unto Peter before them all, If thou, being a Jew, livest after the manner of Gentiles, and not as do the Jews, why compellest thou the Gentiles to live as do the Jews?"—*Gal.* ii. 14.

"Then said Paul unto him, God shall smite thee, thou whited wall: for sittest thou to judge me after the law, and commandest me to be smitten contrary to the law?"—*Acts* xxiii. 3.

Mr. Seymour, in his "Mornings with the Jesuits," asks how the Church of Rome can maintain that the state of celibacy is one of *superior* purity, and at the same time contend that marriage is a sacrament which confers *additional* grace?

8. We often ask a series of questions immediately after one another, in order to bring our arguments to bear more forcibly upon the subject under discussion. We have examples of this in Romans viii. 31—37.

"Have we not all one father? hath not one God created us? why do we deal treacherously every man against his brother, by profaning the covenant of our fathers?"—*Mal.* ii. 10.

"For who maketh thee to differ from another? and what hast thou that thou didst not receive? Now if thou didst receive it, why dost thou glory, as if thou hadst not received it?"—1 *Cor.* iv. 7.

"For whosoever shall call upon the name of the Lord shall be saved. How then shall they call on him in whom they have not believed? and how shall they believe in him of whom they have not heard? and how shall they hear without a preacher? And how shall they preach, except they be sent?"—*Rom.* x. 13—15.

"IMMORAL POETRY.—Was it for this that Poesy was endued with all those allurements that lead the mind away in a pleasing captivity? Was it for this she was furnished with so many intellectual charms, that she might seduce the heart from God, the original beauty, and the most lovely of beings? Can I ever be

persuaded that those sweet and resistless forces of metaphor, wit, sound, and number, were given with this design, that they should be all ranged under the banner of the great malicious spirit, to invade the rights of heaven, and to bring swift and everlasting destruction upon men! How will these allies of the nether-world, the lewd and profane versifiers, stand aghast before the great Judge, when the blood of many souls, whom they never saw, shall be laid to the charge of their writings, and be dreadfully requited at their hands!"—*Preface to Watts's Lyric Poems.*

"EXTEMPORANEOUS PREACHING.—All our wisest thoughts and cares are due to the sacred service of the temple. But what I mean is, that we should not impose upon ourselves just such a number of precomposed words and lines to be delivered in the hour, without daring to speak a warm sentiment that comes fresh upon the mind. Why may you not hope for some lively turns of thought, some new pious sentiments which may strike light and heat and life into the understandings and hearts of those that hear you? In the zeal of your ministrations, why may you not expect some bright and warm and pathetic forms of argument and persuasion to offer themselves to your lips, for the more powerful conviction of sinners, and the encouragement and comfort of humble Christians? Have you not often found such an enlargement of thought, such a variety of sentiment and freedom of speech, in common conversation upon an important subject, beyond what you were apprised of beforehand? And why should you forbid yourself this natural advantage in the pulpit, and in the fervour of sacred ministrations, when also you have more reason to hope for divine assistance?"—*Southey's Life of Watts.*

9. By asking questions you will sometimes be able to throw the *onus probandi* upon your opponent. It is generally much easier to ask questions than to answer them, and 'tis often an advantage in disputation, if you can put your antagonist into a defensive position. He had better be employed in defending himself than in attacking you. This is usually the case when positive proof cannot be adduced on either side.

"Dr. Watts was aware—he could not indeed fail to perceive—that he exposed himself to some reproach for supposing that the distinctions of human society were, in a certain sense, continued beyond this world. 'Some,' said he, 'will reprove me here, and say—What, must none but ministers and authors and learned men have their distinguished rewards and glories in the world of spirits? May not artificers and traders and pious women be fitted by their character and conduct on earth for peculiar sta-

tions and employment in heaven? Yes, doubtless,' he answers. But he asks whether Deborah, who animated the armies of Israel, and sang their victories, is not engaged in some more illustrious employment among the heavenly tribes than Dorcas, whose highest character is that she was full of alms-deeds, and made coats and garments for the poor? and whether Dorcas is not 'prepared for some greater enjoyments, some sweeter relish of mercy, or some special taste of the divine goodness above Rahab the harlot?' Different, however, as may be the degrees of good in heaven, all may be perfect there, and free from every defect." —*Southey's Life of Watts.*

The words *onus probandi* mean the burden of proving. It may be useful to notice the cases in which this burden may rightfully fall upon you. In all cases when you attack a generally received opinion, you are bound to prove the unsoundness of that opinion. Sentiments which are universally acknowledged to be true, are seldom very minutely examined. There is no object in inquiring into the ground of a doctrine that no one ever denies. If you think any opinion of this kind is erroneous, you have a right to assail it; but you have no right to single out at a moment's warning any professed believer in that doctrine, and demand from him a reason for his creed. If you wish for controversy, you are bound to lead the attack. If you cannot do this, you are bound to hold your tongue.

If you advocate any kind of political or social reform, the *onus probandi* falls upon you. You are bound to show the advantages of the change. You have no right, in the first instance, to call upon your opponent to show that the proposed change would not be advantageous. Every new act of parliament is a change, and every member who brings forward a new bill is bound to show the advantages that would result from the adoption of the measures that he recommends.

If you offer a bill to your banker for discount, the *onus probandi* falls upon you to prove that it is a good bill. If you cannot do this, he will be justified in refusing to discount it. You have no right to call upon him to prove that it is not a good one. So, if you give a bad character to any one, you are bound to prove the truth of your accusation. You have no right to call upon him to disprove the charge, and to assume it to be true if he cannot do so. The *onus*

probandi in this as in the former case falls clearly on yourself.

Generally speaking, the *onus probandi* falls upon the advocate of the *affirmative* of any proposition. No man should be called upon to prove a negative. In practical questions, however, it is not always easy to state which side is properly the affirmative, as much will depend upon the wording of the sentence. But in all cases the assailant or challenger is bound to prove his own case; the *onus probandi* most unquestionably falls upon him. But a party is not in all cases called upon to accept the challenge. And we will now notice the cases in which a challenge to controversy may be honourably declined. You are not bound to accept a challenge, to dispute upon a subject that you do not understand. If pressed for an opinion, you may fairly say, "I am not sufficiently acquainted with the matter to be able to offer any opinion on the subject." Nor are you bound to accept a challenge to disputation from a party who does not himself understand the question. We daily meet with people who think they know our business better than we do ourselves, and who are anxious to dispute with us upon the most knotty points of our profession. In this case we had better answer one question by asking another, and if we have nothing to contend against but simple ignorance, without conceit or obstinacy, we may, peradventure, by the adoption of Socratical interrogations, lead our pugnacious friend into a better knowledge of the subject. When Nathanael asked, "Can any good thing come out of Nazareth?" Philip did not engage in controversy on the question, but merely replied, "Come and see."

SECTION III.

CONVERSATIONAL REASONING.

By conversational reasoning, I mean that kind of reasoning which is employed chiefly in conversation. I say chiefly, for there is no kind of reasoning that is employed exclusively in conversation, nor is conversational reasoning

confined to only one kind. But all kinds of reasoning, when employed in conversation, are employed in a different manner as to the form or mode of expression, than when employed in books or in speeches. It is impossible to describe all these forms. Every man will express his reasons in conversation in a way of his own, according to his constitutional temperament, his education, his temper at the time, the occasion, or the manners of the society in which he is accustomed to move. You may therefore improve your knowledge daily by merely observing the conversation of your friends. I noticed an example of conversational logic this evening in the omnibus. A long-legged gentleman sat on one side, and placed his feet upon the cushion on the opposite side. The conductor looked in and said, "Excuse me, Sir, but those cushions were made to sit on." This was doubtless intended as a reason why the gentleman should take his dirty boots off the cushion. You see the *form* is very concise and suggestive.

1. The language and form of conversational reasoning.

This is chiefly by enthymemes. I wish I had a good English word to substitute for the Greek word *enthymeme* —it signifies, *from the mind.* Reasoning by enthymemes therefore means reasoning from the mind:—reasoning as you think, or talk, or write, in the ordinary affairs of life. You have heard of a character in a French play, who was surprised to learn that he had been talking prose for fifty years without knowing it. He might have made the same observation respecting enthymemes. Whenever you have given a reason, you have spoken an enthymeme. If you observe to a friend, "It is a fine day," that is a description. If you ask, "Is it going to be wet?" that is an interrogation. If you say, "I shall take my umbrella, for I think it will rain," that is an enthymeme.

Enthymemes are treated of largely in Aristotle's Rhetoric. The following is the substance of his doctrine respecting them. An enthymeme bears the same relation to rhetoric as a syllogism to logic. It is composed of a sentence and a reason. A sentence is a general proposition concerning those things which are to be desired, or avoided, and it bears the same relation to an enthymeme

as any proposition to a syllogism. And therefore a sentence, if a reason be rendered, becomes a conclusion, and both together make an enthymeme. The following is an example given by Aristotle: "To be over-learned produces effeminacy and envy. Therefore, he that is wise, will not suffer his children to be over-learned." The form of this enthymeme may be reversed, thus: "A wise man will not suffer his children to be over-learned, because too much learning produces effeminacy and envy."

The Rev. John Huyshe, M.A. of Brazenose College, Oxford, in a Treatise on Logic, intended to assist those who wish to study Aldrich's Logic, in order to pass their examination in the Oxford schools, has thus treated of enthymemes:—

"1. The enthymeme is a defective syllogism, which consists of one premiss and a conclusion; *e.g.*

'Diamonds are jewels; they are therefore valuable.'

'God is a spirit; therefore he is eternal.'

"An enthymeme may easily be reduced to a regular syllogistic form; for since the conclusion and one premiss are given, the three terms may be known, and the omitted premiss may be supplied: thus, in the above example, the major, 'All jewels are valuable,' is omitted, and, if supplied, the syllogism will be regular, thus:

'All jewels are valuable;'
'Diamonds are jewels;'
therefore, 'Diamonds are valuable,'

"Again:

'Every spirit is eternal;'
'God is a spirit;'
therefore, 'God is eternal.'

"In both these examples, the major premiss is suppressed; for, as was before observed, the major premiss is, generally speaking, some universal and incontrovertible principle, which is so evident that it is left to the hearer's judgment; but the minor premiss is most commonly expressed, because it has more particular reference to the question which is to be proved.

"In common discourse the usual mode of expressing an argument is by means of the enthymeme; it being unnecessary to adduce both the premises, when *one* is so evident that it may very fairly be left to the hearer's judgment; *e.g.*

"'When we find a book quoted, or referred to by an ancient author, we are entitled to conclude that it was read and received in the age and country in which that author lived.' This sen-

tence is an enthymeme, in which the major premiss is suppressed, but which may easily be supplied as follows: 'Every book quoted, or referred to by an ancient author, must have been read and received in the age and country in which that author lived.' The sentence may thus be reduced to a regular syllogism in Barbara: this may be effected in most enthymemes without much difficulty, whether their conclusions be negative or affirmative.

"Although the major premiss is generally suppressed in most enthymemes, yet there are some enthymemes in which the *minor* premiss is found to be omitted: this may happen when the minor premiss is very evident, or when much stress is meant to be laid upon the *major*; e. g. 'Every tyrannical king deserves to be deposed by his subjects; therefore Nero deserved to be deposed by the Romans.' The minor premiss which is suppressed, may be thus supplied:

'Nero was a tyrannical king:'

and thus the argument is reduced to the regular syllogistic form.

"An enthymeme is sometimes condensed into one sentence, which is called an enthymematic sentence; viz. when the premiss is united in one proposition with the conclusion; *e. g.* 'All machines, being of human manufacture, are liable to imperfections.' This argument may be thus expanded into a regular syllogism:

'All things of human manufacture are liable to imperfections;'

'All machines are of human manufacture:'

therefore, 'They are liable to imperfections."

—*Huyshe's Treatise on Logic.*

Mr. Munro, another scholastic logician, takes a different view of the nature of the enthymeme:—

"A very prevalent error, regarding the nature of the enthymeme, is, that it is a syllogism with one premiss suppressed, or, as it is often termed, an *imperfect* or *defective* syllogism. . . . In Aristotle's writings it never means this. An enthymeme, in its proper signification, may be as complete in its expression as any other kind of syllogism; for it merely differs from the syllogism in this, that its conclusion depends on *signs* and *likelihoods*. Its province is mainly probable reasoning, and therefore treats reasoning as applied to a particular kind of *matter*. It does not proceed upon axioms, like the syllogism. The matter of the major premiss of an enthymeme is taken from the τοποι (topics or common-places), and these hold the same place in regard to the enthymeme, which the axioms do to the syllogism. The τοποι, or common-places, are general principles, based on probabilities, not on axioms; and the term τοπος, in this application, may be

explained by naming it the *place* where middle terms are found. But since enthymemes derive their force only from cumulation, there is nothing gained from reducing them to syllogistic form." —*Munro's Manual of Logic.*

We shall take no part in this dispute, as we do not think Aristotle's opinions or intentions on the subject to be a matter of much importance. You need only remember that the occurrence of "*for*," "*because*," "*therefore*," or any similar word, either in conversation or in reading, usually denotes an enthymeme; in other words, denotes a reason or argument expressed naturally, without the formality of scholastic logic. The following are some examples given by Mr. Hill.

"The human soul is immaterial, *consequently* it is immortal.

"We enjoy a greater degree of political liberty than any civilized people on earth, and *therefore* have no excuse for a seditious disposition.

"The power of ridicule is a dangerous faculty, *since* it tempts its possessor to find fault unjustly, and to distress some for the gratification of others.

"The study of mathematics is essential to a complete course of education, *because* it induces a habit of close and regular reasoning.

"Hard substances may be elastic, *for* ivory is both hard and elastic."

The following are examples of enthymematic sentences:—

"The example of Virgil shows that even a great poet may be seduced into some faults by the practice of imitation.

"The apparent insufficiency of every individual to his own happiness or safety, compels us to seek from one another assistance and support.

"Should such a man as I flee?

"Real learning is too valuable a thing to be within the grasp of the idle.

"I ask your lordships, whether Parliament will be in a state to transact public business, or be attended by a sufficient number of members, while engaged in preparing for a public election."—*Hill's Logic.*

2. The principles of reasoning most in use in conversation.

We refer not here to that communication which takes place on occasion of buying and selling, or in any other of the business transactions of life. We speak of that kind of conversation which takes place in the hours of social intercourse. Into this circle, formal logical definitions, and processes of syllogistic reasoning, are never introduced. Nor do we witness any pitched battles of controversy—nor systematic discussions of any one topic —nor captious objections—nor triumphant boastings. Every principle of reasoning may be introduced into conversation, but I think those most frequently employed are the relation of cause and effect, of example, and of analogy. You call on a friend, and find he has taken cold. You inquire the cause. It may be he rode in an omnibus with the windows open; he was caught in a shower without an umbrella; or he got wet in the feet, and did not change his boots; or perhaps his female relations will tell you that it was all his own fault, as he never takes proper care of himself. Here you will have an interesting discussion upon the relation of *cause and effect.* But you observe, you had previously called on half a dozen of your friends, and they all had colds. You infer it is a very unhealthy season. Here you reason from example, and you arrive at your conclusion by *induction.* But you think the situation of your friend's house is a very exposed one, and you make a *comparison* between that and other situations which are more sheltered. The language of conversational reasoning will be, as we have stated, enthymemical. Descriptions, when introduced, will be short, unless one of the party is describing an object which the others have not seen, as the hippopotamus, or the crystal palace. Interrogative reasoning is sometimes employed, but chiefly in the form of inquiry,—"How do you account for this?" And in this mode it is sometimes prefixed to an argument from analogy. The form of dilemma—a form to be hereafter described—is also often used in conversation. By a little observation on those conversations that come under your notice, you will soon be able to discover the principles and forms of reasoning that enter into their composition.

Some time ago I overheard, while sitting in an omnibus,

an energetic controversy between a butcher's boy and the conductor. It was on the morning of a Christmas-day. The butcher's boy had come from London to Peckham on the omnibus, with a large tray of meat. He offered sixpence; the conductor demanded a shilling: whereupon issue was joined. In arguing this point, the butcher's boy asserted:—1. That sixpence was the regular fare. 2. That he had come the same journey several times before, and had never paid more than sixpence. 3. That his master had given him but sixpence to pay the fare, and if he paid more he should have to pay it out of his own pocket. 4. That if he had been disposed to do this, he had not got sixpence in his pocket. To these arguments the conductor replied:—1. Sixpence was the regular fare for a passenger, but the boy had brought a tray of meat as heavy as himself, and therefore "it stood to reason" that he ought to pay for the meat as well as for himself. 2. That on the former occasions he brought with him a much lighter tray of meat, and therefore "that was nothing to the purpose." 3. It was nonsense to suppose that a master would make the servant pay for the carriage of his meat to his customers: if, then, he had given the boy only one sixpence when he started, he must give him another when he went back. 4. If he had no money to pay the debt he had incurred, then he must leave a pledge till he fetched it; whereupon the conductor took a leg of mutton off the tray, and declared he would keep it till the sixpence was paid.

3. The rules usually observed in conversational reasoning.

Dr. Watts, in his "Improvement of the Mind," has some excellent observations on this subject, as well as on conversation in general. Presuming that with these my readers are already familiar, I shall lay before them some extracts from a work published under the title of "The Art of Conversation, with Remarks on Fashion and Dress, by Captain Orlando Sabertash:"—

"If you have been an observer in the world, you will have seen how much information is pleasantly conveyed to the mind by its means; and how often new ideas are awakened, and new

sources of thought, study, and reflection opened out by a little lively discourse.

"But not to speak of instruction alone; recollect how great and essential a part conversation acts in life and society; how much of our happiness, how many of our joys, result from pleasant, lively, and agreeable discourse; consider how often we have seen it alleviate pain, sorrow, and affliction, and soothe the bed of sickness: and then smile, if you can, at this attempt to give its better influence a wider range. Does not cheerful conversation exhilarate and expand the heart, make the blood circulate freely through the veins, brighten and give elasticity to the spirit, and cast over the whole frame that glow of healthy satisfaction physicians deem it the greatest proof of skill to call forth? It thus acts beneficially on the body even, and is one of the best medicines that can be administered."

"How often have we not seen pleasant conversation charm the family circle assembled round the evening fire; link the members in happy union together, and prevent the idle from rambling abroad in search of thoughtless amusements, ending too frequently in ruinous dissipation?"

"As the object of conversation is pleasure and improvement, those subjects only which are of universal interest can be made legitimate topics of pleasantry or discussion. And it is the gift of expressing thoughts and fancies in a quick, brilliant, and graceful manner on such topics,—of striking out new ideas, eliciting the views and opinions of others, of attaching the interest of all to the subject discussed,—giving it, however trifling in itself, weight and importance in the estimation of the hearers, that constitutes the great talent for conversation."

"As to subjects for conversation, what difficulty can there be about them? Will not books, balls, bonnets, and metaphysics furnish pleasant topics of discourse? Can you not speak of the

"'Philosophy and science, and the springs
Of wonder, and the wisdom of the world?'—

Are flirtation, travelling, love, and speech-making at an end; is St. Stephen's shut up; or is the great globe itself and the weather on its surface so perfectly stationary that you can find nothing to say about them? No, no, let us not deceive ourselves: we never want subjects of conversation; but we often want the knowledge how to treat them; above all, how to bring them forward in a graceful and pleasing manner."

"There is, I am sorry to say, a great deal of servility in the very best society: a needless meanness, seen through at once; for you may be pleasant, courteous, and well-bred, without cringing to the wit or opinions of others. All that is expected, or can be expected from you, is, that you are not to shock the unsuc-

cessful wit by exposing his stupidity, however glaring it may be, *nor mark dissent from opinions in which you may not coincide, in such a manner as to bring on an argument or discussion.* Any pleasant, passing, and good-humoured jest, will free you from noticing the wit, if particularly forced upon your attention; even as an easy, playful dissent from objectionable opinions will relieve you from the necessity of disputing or submitting to them.

"Franklin says, that you must never contradict in conversation, nor correct facts if wrongly stated. This is going much too far: you must never contradict in a short, direct, or positive tone; but with politeness, you may easily, when necessary, express a difference of opinion in a graceful and even complimentary manner. And I would almost say, that the art of conversation consists in knowing *how* to contradict, and *when* to be silent; for, as to constantly acting a fawning and meanly deferential part in society, it is offensive to all persons of good sense and good feeling. In regard to facts wrongly stated, no well-bred man ever thinks of correcting them, merely to show his wisdom in trifles; but with politeness, it is perfectly easy to rectify an error, when the nature of the conversation demands the explanation.

"Whenever the lady or gentleman with whom you are discussing a point, whether of love, war, science or politics, begins *to sophisticate, drop the subject instantly.* Your adversary either wants the ability to maintain his opinion,—and then it would be uncivil to press it;—or he wants the still more useful ability to yield the point with unaffected grace and good humour; or, what is also possible, his vanity is in some way engaged in defending views on which he may probably have acted, so that to demolish his opinions is perhaps to reprove his conduct, and no well-bred man goes into society for the purpose of sermonising."

"In merely relating an ordinary tale or anecdote, you will most certainly,—if you are an observer of character,—relate it differently,—not in import perhaps, but in voice and manner,—to different persons. A man of the world will naturally, and without premeditated effort or thought, so regulate his words, tone, and the very voice in which he speaks, as to make the best impression on the individual addressed. And as no two persons are *exactly* alike in the world, a good judge will not address them as if they were."

"Anecdotes are pretty gems in conversation, and furnish admirable illustrations: they also serve to fill up a threatening pause, and give fresh life to expiring discourse; and must, of course, be appropriate, short, well timed, and well told. But let no one hope to found a claim for conversational powers on a mere collection of anecdotes; for however numerous, they will necessarily wear out, and they never admit of being repeated."

"Anecdotes must be looked upon as particles of well-flavoured spice, to season and enliven discourse, rather than as a very essential portion of the dish itself. Still a good relater of anecdotes is a great acquisition in company; for he can not only link the scattered fragments of discourse round some well-applied illustration, but if skilful in his line, can give a pleasing turn to conversation when taking a faulty direction."

Man's superiority over other animals has been attributed to his powers of association and conversation:—

"His gregarious nature is another cause of man's superiority over all other animals. A lion lies under a hole in a rock; and if any other lion happen to pass by, they fight. Now, whoever gets a habit of lying under a hole in a rock, and fighting with every gentleman who passes near him, cannot possibly make any progress. Every man's understanding and acquirements, how great and extensive soever they may appear, are made up from the contributions of his friends and companions. You spend your morning in learning from Hume what happened at particular periods of your own history: you dine where some man tells you what he has observed in the East Indies, and another discourses of brown sugar and Jamaica. It is from these perpetual rills of knowledge that you refresh yourself, and become strong and healthy as you are. If lions would consort together, and growl out the observations they have made, about killing sheep and shepherds, the most likely places for catching a calf grazing, and so forth, they could not fail to improve; because they would be actuated by such a wide range of observation, and operating by the joint force of so many minds."—*Sydney Smith's Moral Philosophy.*

"One great advantage which man has over the other animals consists in the power of co-operation. It is by this means that the whole community is benefited by the exertions of each individual. This power of co-operation could not exist unless mankind possessed a prompt and perfect mode of communicating their ideas to each other. And this ready communication exists only by means of language. Language, too, is not merely a channel of thought, it is a vehicle of feelings, and by it we are able to impart our sentiments in such a way as to impress our emotions on the minds of our auditors. By language men are aroused into indignation or softened into sympathy. Without language we could not be enlightened with the instructions of science, or enraptured with the beauties of poetry. To this we owe all the pleasures of our public assemblies, and all the luxuries of social intercourse; it is from this we derive all the happiness we receive from the specu-

lations of philosophy, the brilliancy of wit, the thunders of eloquence, and the melody of song.

"By the power of language we are enabled to be useful to others. We can instruct the ignorant, caution the unwary, or console the afflicted. Of what use is the intense application of the student, the conceptions of the poet, or the contemplations of the philosopher, if the result of their labours is known only to themselves? Thoughts valuable as gold in the mine are of no use to others until coined into words. And by imparting information to others, our own faculties are improved. Our intellectual weapons are kept polished by use. Knowledge shut up in the mind of its possessor is like a stagnant pool, useful to none; but when allowed to flow out freely in the channels of language, it becomes a living fountain, the streams of which carry health and beauty and fertility into every district through which they roll."—*Lecture on the Philosophy of Language.*

4. The following are examples of conversational reasoning:—

"I praised the accuracy of an account-book of a lady whom I mentioned. JOHNSON: 'Keeping accounts, Sir, is of no use when a man is spending his own money, and has nobody to whom he is to account. You won't eat less beef to-day because you have written down what it cost yesterday.' I mentioned another lady who thought as he did, so that her husband could not get her to keep an account of the expense of the family, as she thought it enough that she never exceeded the sum allowed her. JOHNSON: 'Sir, it is fit she should keep an account, because her husband wishes it; but I do not see its use.' I maintained that keeping an account has this advantage, that it satisfies a man that his money has not been lost or stolen, which he might sometimes be apt to imagine, were there no written state of his expense; and, besides, a calculation of economy, so as not to exceed one's income, cannot be made without a view of the different articles in figures, that one may see how to retrench in some particulars less necessary than others. This he did not attempt to answer."

"Mr. Walker, the celebrated master of elocution, came in, and then we went up stairs into the study. I asked him if he had taught many clergymen. JOHNSON: 'I hope not.' WALKER: 'I have taught only one, and he is the best reader I ever heard, not by my teaching, but by his own natural talents.' JOHNSON: 'Were he the best reader in the world, I would not have it told that he was taught.' Here was one of his peculiar prejudices. Could it be any disadvantage to the clergyman to have it known that he was taught an easy and graceful delivery? BOSWELL:

'Will you not allow, Sir, that a man may be taught to read well?' JOHNSON: 'Why, Sir, so far as to read better than he might do without being taught, yes. Formerly it was supposed that there was no difference in reading, but that one read as well as another.' BOSWELL: 'It is wonderful to see old Sheridan as enthusiastic about oratory as ever.' WALKER: 'His enthusiasm as to what oratory will do, may be too great: but he reads well.' JOHNSON: 'He reads well, but he reads low; and you know it is much easier to read low than to read high; for when you read high you are much more limited, your loudest note can be but one, and so the variety is less in proportion to the loudness. Now some people have occasion to speak to an extensive audience, and must speak loud to be heard.' WALKER: 'The art is to read strong, though low.'

"Talking of the origin of language:—JOHNSON: 'It must have come by inspiration. A thousand, nay a million of children could not invent a language. While the organs are pliable, there is not understanding enough to form a language; by the time that there is understanding enough, the organs are become stiff. We know that after a certain age we cannot learn to pronounce a new language. No foreigner who comes to England when advanced in life ever pronounces English tolerably well; at least, such instances are very rare. When I maintain that language must have come by inspiration, I do not mean that inspiration is required for rhetoric, and all the beauties of language; for when once man has language, we can conceive that he may gradually form modifications of it. I mean only that inspiration seems to me to be necessary to give man the faculty of speech; to inform him that he may have speech; which I think he could no more find out without inspiration than cows or hogs would think of such a faculty.' WALKER: 'Do you think, Sir, that there are any perfect synonymes in any language?' JOHNSON: 'Originally there were not; but by using words negligently, or in poetry, one word comes to be confounded with another.'"

"In the morning of Tuesday, 15th of June, while we sat at Dr. Adams's, we talked of a printed letter from the Reverend Herbert Croft, to a young gentleman who had been his pupil, in which he advised him to read to the end of whatever books he should begin to read. JOHNSON: 'This is surely a strange advice; you may as well resolve that whatever men you happen to get acquainted with, you are to keep to them for life. A book may be good for nothing; or there may be only one thing in it worth knowing; are we to read it all through? These Voyages, (pointing to the three large volumes of "Voyages to the South Sea," which were just come out) *who* will read them through? A man had better work his way before the mast than read them

through; they will be eaten by rats and mice, before they are read through. There can be little entertainment in such books; one set of savages is like another.' BOSWELL: 'I do not think the people of Otaheite can be reckoned savages.' JOHNSON: 'Don't cant in defence of savages.' BOSWELL: 'They have the art of navigation.' JOHNSON: 'A dog or cat can swim.' BOSWELL: 'They carve very ingeniously.' JOHNSON: 'A cat can scratch, and a child with a nail can scratch.' I perceived this was none of the *mollia tempora fandi;* so desisted.

"Upon his mentioning that when he came to college he wrote his first exercise twice over, but never did so afterwards:—Miss ADAMS: 'I suppose, Sir, you could not make them better?' JOHNSON: 'Yes, Madam, to be sure, I could make them better. Thought is better than no thought.' Miss ADAMS: 'Do you think, Sir, you could make your Ramblers better?' JOHNSON: 'Certainly I could.' BOSWELL: 'I'll lay a bet, Sir, you cannot.' JOHNSON: 'But I will, Sir, if I choose. I shall make the best of them you shall pick out, better.' BOSWELL: 'But you may add to them. I will not allow of that.' JOHNSON: 'Nay, Sir, there are three ways of making them better; putting out, adding, or correcting.'"—*Boswell's Life of Johnson.*

5. After the above examples of conversational reasoning, I will conclude this Section with an example of a conversation without reasoning. It is taken from Miss Austen's description of "The Voluble Lady:"—

"My dear sir, you are too obliging. Is there nobody you would not rather?—I am not helpless. Sir, you are most kind. Upon my word, Jane on one arm, and me on the other! Stop, stop, let us stand a little back, Mrs. Elton is going; dear Mrs. Elton, how elegant she looks—beautiful lace!—Now we all follow in her train. Quite the queen of the evening!—Well, here we are at the passage. Two steps, Jane, take care of the two steps. Oh! no, there is but one. Well, I was persuaded there were two. How very odd! I was convinced there were two, and there is but one. I never saw anything equal to the comfort and style—candles everywhere. I was telling you of your grandmamma, Jane,—there was a little disappointment. The baked apples and biscuits, excellent in their way, you know; but there was a delicate fricassee of sweetbread and some asparagus brought in at first, and good Mr. Woodhouse, not thinking the asparagus quite boiled enough, sent it all out again. Now there is nothing grandmamma loves better than sweetbread and asparagus—so she was rather disappointed; but we agreed we would not speak of it to anybody, for fear of its getting round to dear Miss Wood-

house, who would be so very much concerned. Well, this is brilliant! I am all amazement!—could not have supposed anything!—such elegance and profusion! I have seen nothing like it since.—Well, where shall we sit? Where shall we sit? Anywhere, so that Jane is not in a draught. Where *I* sit is of no consequence. Oh! do you recommend this side? Well, I am sure, Mr. Churchill—only it seems too good—but just as you please. What you direct in this house cannot be wrong. Dear Jane, how shall we ever recollect half the dishes for grandmamma? Soup too! Bless me! I should not be helped so soon, but it smells most excellent, and I cannot help beginning."—*Half-hours with the best Authors.*

SECTION IV.

REASONING BY SINGLE SYLLOGISM.

THE following description of the nature of the syllogism is taken from Dr. Watts:—

"If the mere perception and comparison of two ideas would always show us whether they agree or disagree; then all rational propositions would be matters of intelligence, or first principles, and there would be no use of reasoning, or drawing any consequences. It is the narrowness of the human mind which introduces the necessity of reasoning. When we are unable to judge of the truth or falsehood of a proposition in an immediate manner, by the mere contemplation of its subject and predicate, we are then constrained to use a medium, and to compare each of them with some third idea, that by seeing how far they agree or disagree with it, we may be able to judge how far they agree or disagree among themselves: as, if there are two lines, A and B, and I know not whether they are equal or no, I take a third line C, or an inch, and apply it to each of them; if it agree with them both, then I infer that A and B are equal: but if it agree with one and not with the

other, then I conclude A and B are unequal: if it agree with neither of them, there can be no comparison.

"So if the question be, whether God must be worshipped, we seek a third idea, suppose the idea of a Creator, and say,

"Our Creator must be worshipped;
God is our Creator;
Therefore, God must be worshipped.

"The comparison of this third idea, with the two distinct parts of the question, usually requires two propositions, which are called the premises: the third proposition which is drawn from them is the conclusion.

"The foundation of all affirmative conclusions is laid in this general truth, that so far as two proposed ideas agree to any third idea, they agree also among themselves. The character of Creator agrees to God, and worship agrees to a Creator, therefore worship agrees to God.

"The foundation of all negative conclusions is this, that where one of the two proposed ideas agrees with the third idea, and the other disagrees with it, they must needs disagree so far also with one another; as, if no sinners are happy, and if angels are happy, then angels are not sinners.

"Thus it appears what is the strict and just notion of a syllogism: *it is a sentence or argument made up of three propositions,* so disposed as that the last is necessarily inferred from those which go before, as in the instances which have been just mentioned.

"In the constitution of a syllogism two things may be considered, viz., the matter and the form of it.

"The matter of which a syllogism is made up, is three propositions; and these three propositions are made up of three ideas or terms variously joined.

"The three terms are named the major, the minor, and the middle.

"The predicate of the conclusion is called the major term, because it is generally of a larger extension than the minor term, or the subject. The major and minor terms are called the extremes.

"The middle term is the third idea, invented and disposed in two propositions, in such a manner as to show the connexion between the major and minor term in the

conclusion; for which reason the middle term itself is sometimes called the argument.

"That proposition which contains the predicate of the conclusion, connected with the middle term, is usually called the major proposition, whereas the minor proposition connects the middle term with the subject of the conclusion, and is sometimes called the assumption.

"*Note.* This exact distinction of the several parts of a syllogism, and of the major and minor terms connected with the middle term in the major and minor propositions, does chiefly belong to simple or categorical syllogisms, though all syllogisms whatsoever have something analogical to it.

"*Note* further. That the major proposition is generally placed first, and the minor second, and the conclusion in the last place, where the syllogism is regularly composed and represented.

"The form of a syllogism is the framing and disposing of the premises according to art, or just principles of reasoning, and the regular inference of the conclusion from them.

"The act of reasoning, or inferring one thing from another, is generally expressed and known by the particle *therefore*, when the argument is formed according to the rules of art; though in common discourse or writing, such casual particles as *for*, *because*, manifest the act of reasoning as well as the illative particles *then* and *therefore:* and wheresoever any of these words are used, there is a perfect syllogism expressed or implied, though perhaps the three propositions do not appear, or are not placed in regular form."—*Watts's Logic.*

From the above quotation you will perceive that a syllogism consists of three propositions: the major, the minor, and the conclusion. The major proposition is usually the general proposition, from which the argument is derived. This is the proposition which in the enthymeme is usually implied. The minor proposition is placed second, and shows in what way the general proposition bears upon the particular proposition which is to be proved. This proposition is expressed in the enthymeme. The third

proposition is the conclusion or declaration of the proved proposition. This is illustrated in the example we have just quoted :—

Our Creator must be worshipped ;
God is our Creator ;
Therefore, God must be worshipped.

Here "our Creator must be worshipped," is the major proposition. "God is our Creator," is the minor proposition : and the conclusion, "God must be worshipped," is the third proposition. It will be useful to examine wherein this mode of reasoning differs from that employed in ordinary discourse. If the question were proposed to us—"Why must we worship God?" or, "Why must God be worshipped?" we should reply,—Because he is our Creator. This, we have seen, is the minor, or second proposition of our syllogism. But in ordinary discourse, we should not deem it necessary to assert the major proposition, namely, "That our Creator must be worshipped." We should presume that the party we address admits this to be true.

These two propositions, the *major* and the *minor*, have not derived these titles from the circumstance of one being placed first and the other second, but from quite a different cause. In a syllogism there are three terms as well as three propositions. These terms are called the major, the minor, and the middle term. The major term is the predicate of the conclusion. Thus the phrase—"must be worshipped," in the above syllogism, is called the major term. The minor term is the subject of the conclusion. Thus, in the above syllogism, "God" is the minor term. The middle term is called the argument, and is that term which is introduced to prove the connexion between the two terms of the conclusion. The middle term occurs in both the first two propositions, but does not appear in the conclusion.

The major proposition is that proposition in which the major term is united with the middle term. This proposition is usually placed first. Thus, in the proposition, "Our Creator must be worshipped," the middle term, "Creator," is united to the major term, "must be worshipped."

The minor proposition unites the minor term and the middle term. Thus, in the minor proposition, "God is our Creator," the minor term, "God," is united to the middle term, "Creator."

We will now proceed with our quotations from Dr. Watts.

"*Single syllogisms are made up of three propositions:* compound syllogisms contain more than three propositions, and may be formed into two or more syllogisms.

"Single syllogisms, for distinction's sake, may be divided into simple, complex, and conjunctive."—*Ibid.*

I.—SIMPLE SYLLOGISM.

"Those are properly called simple or categorical syllogisms, which are made up of three plain, single, or categorical propositions, wherein the middle term is evidently and regularly joined with one part of the question in the major proposition, and with the other in the minor, whence there flows a plain single conclusion; as, 'Every human virtue is to be sought with diligence; prudence is a human virtue; therefore, prudence is to be sought with diligence.'"—*Ibid.*

II.—COMPLEX SYLLOGISM.

Those are properly called complex syllogisms, in which the middle term is not connected with the whole subject, or the whole predicate in two distinct propositions, but is intermingled and compared with them by parts, or in a more confused manner, in different forms of speech; as,—

"The sun is a senseless being;
The Persians worshipped the sun;
Therefore, the Persians worshipped a senseless being.

"Here the predicate of the conclusion is, 'worshipped a senseless being,' part of which is joined with the middle term, 'sun,' in the major proposition, and the other part in the minor.

"Though this sort of argument is confessed to be en-

tangled or confused, and irregular, if examined by the rules of simple syllogisms; yet there is a great variety of arguments used in books of learning, and in common life, whose consequence is strong and evident, and which must be ranked under this head; as,—

"Pious men are the only favourites of heaven; true Christians are favourites of heaven; therefore, true Christians are pious men. Or thus, Hypocrites are not pious men; therefore, hypocrites are not favourites of heaven.

"None but physicians came to the consultation; the nurse is no physician; therefore, the nurse came not to the consultation.

"Knowledge is better than riches; virtue is better than knowledge; therefore, virtue is better than riches. A dove will fly a mile in a minute; a swallow flies swifter than a dove; therefore, a swallow will fly more than a mile in a minute.

"The fogs vanish as the sun rises; but the fogs have not yet begun to vanish; therefore, the sun is not yet risen.

"It is necessary that a general understand the art of war; but Caius does not understand the art of war; therefore, it is necessary Caius should not be a general. A total eclipse of the sun would cause darkness at noon; it is possible that the moon at that time may totally eclipse the sun; therefore, it is possible that the moon may cause darkness at noon.

"Christianity requires us to believe what the Apostles wrote; St. Paul is an Apostle; therefore, Christianity requires us to believe what St. Paul wrote.

"No human artist can make an animal; a fly or a worm is an animal; therefore, no human artist can make a fly or a worm.

"The father always lived in London; the son always lived with the father; therefore, the son always lived in London.

"The blossom soon follows the full bud; this pear-tree hath many full buds; therefore, it will shortly have many blossoms.

"One hailstone never falls alone; but a hailstone fell just now; therefore, others fell with it.

"Thunder seldom comes without lightning; but it thundered yesterday; therefore, probably it lightened also.

"Moses wrote before the Trojan war; the first Greek historians wrote after the Trojan war; therefore, the first Greek historian wrote after Moses.

"Now the force of all these arguments is so evident and conclusive, that though the form of the syllogism be never so irregular, yet we are sure the inferences are just

and true; for the premises, according to the reason of things, do really contain the conclusion that is deduced from them, which is a never-failing test of a true syllogism."—*Ibid.*

III.—CONJUNCTIVE SYLLOGISM.

"Those are called conjunctive syllogisms, wherein one of the premises, namely the major, has distinct parts, which are joined by a conjunction, or some such particle of speech. Most times the major or minor, or both, are explicitly compound propositions; and generally the major proposition is made up of two distinct parts or propositions, in such a manner, as that by the assertion of one in the minor, the other is either asserted or denied in the conclusion; or, by the denial of one in the minor, the other is either asserted or denied in the conclusion. It is hardly possible indeed to fit any short definition to include all the kinds of them; but the chief amongst them are the conditional syllogism, the disjunctive, the relative, and the connexive.

"1. The conditional or hypothetical syllogism, is that whose major or minor, or both, are conditional propositions; as, If there be a God, the world is governed by Providence; but there is a God; therefore the world is governed by Providence.

"These syllogisms admit two sorts of true argumentation, where the major is conditional. First, When the antecedent is asserted in the minor, that the consequent may be asserted in the conclusion; such is the preceding example. This is called arguing from the position of the antecedent to the position of the consequent. Secondly, When the consequent is contradicted in the minor proposition, that the antecedent may be contradicted in the conclusion; as, If atheists are in the right, then the world exists without a cause; but the world does not exist without a cause; therefore, atheists are not in the right. This is called arguing from the removing of the consequent to the removing of the antecedent."

"2. A disjunctive syllogism is when the major proposition is disjunctive; as, The earth moves in a circle or an

ellipsis; but it does not move in a circle; therefore, it moves in an ellipsis.

"A disjunctive syllogism may have many members or parts; thus, It is either spring, summer, autumn, or winter; but it is not spring, autumn, or winter; therefore, it is summer.

"3. A relative syllogism requires the major proposition to be relative; as, Where Christ is, there shall his servants be; but Christ is in heaven; therefore, his servants shall be there also. Or, As is the captain, so are his soldiers; but the captain is a coward; therefore, his soldiers are so too.

"Arguments that relate to the doctrine of proportion must be referred to this head; as, As two are to four, so are three to six; but two make the half of four; therefore, three make the half of six.

"4. A connexive syllogism requires that two or more ideas be so connected, either in the complex subject or predicate of the major, that if one of them be affirmed or denied in the minor, common sense will naturally show us what will be the consequence.

"Meekness and humility always go together; Moses was a man of meekness; therefore, Moses was also humble. Or we may form this minor, Pharaoh was no humble man; therefore, he was not meek.

"No man can serve God and Mammon; the covetous man serves Mammon; therefore, he cannot serve God. Or the minor may run thus, The true Christian serves God; therefore, he does not serve Mammon."—*Ibid.*

Academic or scholastic disputation, which was carried on by syllogism, is thus described in Dr. Watts's "Improvement of the Mind:"—

"The common methods in which disputes are managed in the schools of learning are these; viz.

"1. The tutor appoints a question in some of the sciences to be debated amongst his students: one of them undertakes to affirm or to deny the question, and to defend his assertion or negation, and to answer all objections against it: he is called the respondent; and the rest of the students in the same class, or who pursue the same science, are the opponents, who are ap-

pointed to dispute or raise objections against the proposition thus affirmed or denied.

"2. Each of the students successively in their turn becomes the respondent or the defender of that proposition, while the rest oppose it also successively in their turns.

"3. It is the business of the respondent to write a thesis in Latin, or short discourse on the question proposed; and he either affirms or denies the question according to the opinion of the tutor, which is supposed to be the truth, and he reads it at the beginning of the dispute.

"4. In his discourse (which is written with as great accuracy as the youth is capable of), he explains the terms of the question, frees them from all ambiguity, fixes their sense, declares the true intent and meaning of the question itself, separates it from other questions with which it may have been complicated, and distinguishes it from other questions which may happen to be akin to it, and then pronounces in the negative or affirmative concerning it.

"5. When this is done, then in the second part of his discourse he gives his own strongest arguments to confirm the proposition he has laid down, *i. e.* to vindicate his own side of the question: but he does not usually proceed to represent the objections against it, and to solve or answer them; for it is the business of the other students to raise objections in disputing.

"6. Note, In some schools, the respondent is admitted to talk largely upon the question with many flourishes and illustrations, to introduce great authorities from ancient and modern writings for the support of it, and to scatter Latin reproaches in abundance on all those who are of a different sentiment. But this is not always permitted, nor should it indeed be ever indulged, lest it teach youth to reproach instead of reasoning.

"7. When the respondent has read over his thesis in the school, the junior student makes an objection, and draws it up in the regular form of a syllogism: the respondent repeats the objection, and either denies the major or minor proposition directly, or he distinguishes upon some word or phrase in the major or minor, and shows in what sense the proposition may be true, but that that sense does not affect the question; and then declares, that in the sense in which it affects the present question, the proposition is not true, and, consequently, he denies it.

"8. Then the opponent proceeds by another syllogism to vindicate the proposition that is denied; again the respondent answers by denying or distinguishing.

"Thus the disputation goes on in a series or succession of syllogisms and answers, till the objector is silenced, and has no more to say.

"9. When he can go no further, the next student begins to

propose his objection, and then the third and the fourth, even to the senior, who is the last opponent.

"10. During this time, the tutor sits in the chair as president, or moderator, to see that the rules of disputation and decency be observed on both sides; and to admonish each disputant of any irregularity in their conduct. His work is also to illustrate and explain the answer or distinction of the respondent where it is obscure, to strengthen it where it is weak, and to correct it where it is false; and when the respondent is pinched with a strong objection, and is at a loss for an answer, the moderator assists him, and suggests some answer to the objection of the opponent, in defence of the question, according to his own opinion or sentiment."

The advantages and disadvantages of this method of disputation are thus pointed out:—

"1. It must be confessed there are some advantages to be attained by academical disputation. It gives vigour and briskness to the mind thus exercised, and relieves the languor of private study and meditation. It sharpens the wit, and all the inventive powers. It makes the thoughts active, and sends them on all sides to find arguments and answers both for opposition and defence. It gives opportunity of viewing the subject of discourse on all sides, and of learning what inconveniences, difficulties, and objections, attend particular opinions. It furnishes the soul with various occasions of starting such thoughts as otherwise would never have come into the mind. It makes a student more expert in attacking and refuting an error, as well as in vindicating a truth. It instructs the scholar in the various methods of warding off the form of objections, and of discovering and repelling the subtile tricks of sophisters. It procures also a freedom and readiness of speech, and raises the modest and diffident genius to a due degree of courage.

"2. But there are some very grievous inconveniences that may sometimes overbalance all these advantages. For many young students, by a constant habit of disputing, grow impudent and audacious, proud and disdainful, talkative and impertinent, and render themselves intolerable by an obstinate humour of maintaining whatever they have asserted, as well as by a spirit of contradiction, opposing almost every thing that they hear. The disputation itself often awakens the passions of ambition, emulation, and anger; it carries away the mind from that calm and sedate temper which is so necessary to contemplate truth.

"3. It is evident, also, that by frequent exercises of this sort, wherein opinions true and false are argued, supported, and refuted on both sides, the mind of man is led by insensible de-

grees to an uncertain and fluctuating temper, and falls into danger of a sceptical humour, which never comes to an establishment in any doctrines. Many persons by this means become much more ready to oppose whatsoever is offered in searching out truth; they hardly wait till they have read or heard the sentiment of any person, before their heads are busily employed to seek out arguments against it. They grow naturally sharp in finding out difficulties; and by indulging this humour, they converse with the dark and doubtful parts of a subject so long, till they almost render themselves incapable of receiving the full evidence of a proposition, and acknowledging the light of truth. It has some tendency to make a youth a carping critic, rather than a judicious man."

We presume that disputes of this kind were carried on at Oxford in the time of Mr. John Wesley: Southey informs us that

"Eight months after his election to a fellowship, he was appointed Greek lecturer, and moderator of the classes. At that time disputations were held six times a-week at Lincoln College, and however the students may have profited by them, they were of singular use to the moderator. 'I could not avoid,' he says, 'acquiring hereby some degree of expertness in arguing, and especially in discerning and pointing out well-covered and plausible fallacies. I have since found abundant reason to praise God for giving me this honest art. By this, when men have hedged me in by what they called demonstrations, I have been many times able to dash them in pieces, and in spite of all its covers, to touch the very point where the fallacy lay, and it flew open in a moment.'"—*Southey's Life of Wesley.*

Lord Bacon observed in his *Novum Organum*, published in the year 1605, "that the logic now in use is not conducible to the finding out of true science, but tends to the establishment and confirmation of errours which are founded in vulgar notions, rather than to a serious inquiry after truth."

"A syllogisme," he states, "is not used among the principles of sciences, and in medial axioms it is employed in vain, for it falls much short of Nature's subtilty. It consists of propositions, propositions of words, words interpret notions; therefore, if notions, the basis of things, be confused and rashly abstracted from things, nothing will be firm that is built upon them; therefore, our only assurance is in a right induction."

The PORT ROYAL Logic was published at Paris by the Jansenists, in the year 1662. The authors seem to have had no very high opinion of the Aristotelian forms of logic. They refer to "certain matters difficult enough, but of little use, such as the conversion of propositions, and the demonstration of the rules of figure." And they express a doubt of the usefulness of the syllogism, saying, "that the greater part of the errors of men arise much more from their reasoning on false principles, than from their reasoning wrongly on their principles."

MR. HALLAM observes in his "Literature of Europe," that after the publication of the Port Royal Logic, "it became more and more acknowledged, that the rules of syllogism go a very little way in rendering the mind able to follow a course of inquiry without error, much less in assisting it to discover truth, and that even their vaunted prerogative of securing us from fallacy is nearly ineffectual in exercise."

LOOKE'S Essay on the Human Understanding, was published in the year 1688. He condemns strongly the syllogistical form of reasoning. It is useless, inasmuch as you must understand your argument before you can form the syllogism; and then it comes too late to settle the matter. It is of no assistance to reasoning, as it is more difficult to understand the rules of syllogism than it is to understand the argument. The mass of mankind know nothing of it, and yet they reason well, and did so long before syllogisms were invented. God did not make men two-legged creatures, and leave it to Aristotle to make them reasonable beings.

DR. WATTS, throughout his work, has strongly enforced the doctrine, that an acquaintance with the things themselves is the only way of reasoning correctly about them. And he exhorts his readers not to rely upon the mere forms of scholastic logic.

He thus speaks of formal definitions :—

"After all, it must be confessed that many logicians and philosophers, in former ages, have made too great a bustle about the exactness of their definitions of things, and entered into long, fruitless controversies, and very ridiculous debates in the several sciences, about adjusting the logical formalities of every defini-

tion; whereas that sort of wrangling is now grown very justly contemptible, since it is agreed that true learning and the knowledge of things depends much more upon a large acquaintance with their various properties, causes, effects, subject, object, ends, and designs, than it does upon the formal and scholastic niceties of genus and difference."—*Watts's Logic.*

In the section on the opposition and conversion of propositions, he observes:—

"The logicians of the schools have written many large trifles concerning the opposition and conversion of propositions. It will be sufficient here to give a few brief hints of these things, that the learner may not be utterly ignorant of them."—*Ibid.*

The following are his remarks on the moods and figures of simple syllogisms:—

"Simple syllogisms are adorned and surrounded in the common books of logic with a variety of inventions about moods and figures, wherein by the artificial contexture of the letters A, E, I, and O, men have endeavoured to transform Logic, or the Art of Reasoning, into a sort of mechanism, and to teach boys to syllogise, or frame arguments and refute them, without any real inward knowledge of the question.

"This is almost in the same manner as schoolboys have been taught perhaps in their trifling years to compose Latin verses, that is, by certain tables and squares, with a variety of letters in them, wherein by counting every sixth, seventh, or eighth letter, certain Latin words should be framed in the form of hexameters or pentameters, and this may be done by those who know nothing of Latin or of verses.

"I confess some of these logical subtleties have much more use than those versifying tables, and there is much ingenuity discovered in determining the precise number of syllogisms that may be formed in every figure, and giving the reasons of them; yet the light of nature, a good judgment, and due consideration of things, tend more to true reasoning than all the trappings of moods and figures."—*Ibid.*

Dr. Campbell published his Rhetoric in the year 1776. He strongly condemns the syllogistic mode of reasoning as unnatural and prolix. Its rules are cumbersome to the memory, and unnecessary in practice. This method of arguing has not the least affinity to moral reasoning. In matters that we know by experience, it can be of little or no utility. And it has produced two evils;—a desire of

disputing on every subject, however incontrovertible, and a philosophical pride, which will not permit us to believe anything, even a self-evident principle, without a previous reason or argument.

From the time of the publication of Dr. Watts's Logic, the scholastic forms of reasoning appear to have fallen into disuse. Dr. Whately, the present Archbishop of Dublin, was the means of reviving attention to the subject in the University of Oxford. He was at that time the Principal of St. Alban's Hall. His publication on the subject first appeared in the "Encyclopædia Metropolitana," and was afterwards published separately. Not only were the scholastic forms resumed, but new definitions of logic were brought forward; and they who had stated in their works any theory inconsistent with these definitions were charged with being ignorant of the nature of the science. Dr. Watts is repeatedly censured for calling logic the art of using our reason well. And we are told that "Logic is the art of employing language properly for the purpose of reasoning"; and "is entirely conversant about language." According to Dr. Whately, the principle of the syllogism is the principle of all reasoning. The art of reasoning is the art of syllogizing. It is not the province of logic to prove the truth of the proposition employed in the syllogism, but merely to see that the conclusion follows naturally from those propositions, supposing them to be true. And this point is to be ascertained, not by the exercise of the judgment, but by the application of certain rules which scholastic logicians have drawn up for this purpose. To perceive the force of a syllogistic argument, it is not necessary to be acquainted with the subject, nor even in some cases to understand the meaning of the words.

Sir William Hamilton, a Professor of Logic and Metaphysics in the University of Edinburgh, has proposed what he deems an improvement in the syllogistic mode of reasoning, by the adoption of what he calls "the quantification of the predicate." By this phrase he means nothing more than that the word "all" or "some" should be attached to the predicate of the propositions that enter into the syllogism. Thus, instead of saying "All men are

mortal;" he would say, "All men are some mortal;" to denote that other beings are mortal besides men. A book has been published on this subject by Mr. Thomas Spencer Baynes, under the sanction and approval of Sir William Hamilton, entitled "An Essay on the New Analytic of Logical Forms." It is difficult to perceive what great practical advantage would be gained by this suggestion, even were it universally adopted. The arguments in favour of its adoption rest mainly on the defects of the present system. Mr. Baynes states, that logic has remained imperfect and deformed in the hands of all previous logicians; and that in regard to "the common doctrine of syllogistic figure, mood and reduction, the whole doctrine is cumbrous and unsatisfactory; inconsistent, and destructive of the science itself." Mr. Baynes, from the extent of his logical reading, should be a very competent witness on this subject. He has shown, we think, that the rules of scholastic logic contain *some* great inconsistencies. It is remarkable how ready scholastic logicians are to censure their own system as explained by other writers. Archbishop Whately accuses I know not how many preceding writers of being "ignorant of the nature of the science." And Mr. Baynes considers the whole science to have been imperfect from the days of Aristotle to Sir William Hamilton; and he rejoices "to know that one has at length arisen able to recognise and complete the plan of the mighty builder, Aristotle; to lay the top-stone on that fabric, the foundations of which were laid more than two thousand years ago by the master hand of the Stagyrite." We will not deny that the censures on the scholastic logicians are *some* deserved; but we think the eulogium on Sir W. Hamilton's discovery is in a high degree *some* excessive.

Mr. Mill steers a middle course with regard to the syllogism. He says,—"Archbishop Whately has contended that syllogizing or reasoning from generals to particulars is not, agreeably to the vulgar idea, a peculiar *mode* of reasoning; but the philosophical analysis of *the* mode in which all men reason, and must do so, if they reason at all. With the deference due to so high an authority, I cannot help thinking that the vulgar notion is in this case the more

correct." In the syllogism, All men are mortal; the Duke of Wellington is a man; therefore, the Duke of Wellington is mortal:—Mr. Mill thinks that we do *not* infer the mortality of the Duke of Wellington from the general proposition, All men are mortal, but "from our experience of John, Thomas, &c., who once were in being, but are now dead." He contends that all inference is from particulars to particulars, and that general propositions are merely registers of such inferences. Dr. Whewell thinks that this doctrine of Mr. Mill, "that the force of the syllogism consists in *an inductive assertion with an interpretation added to it*, solves very happily the difficulties which baffle the other theories of this subject." This question is rather beyond the limits we have assigned to our own inquiries. But it appears to us that if the individual conclusion is not a deduction from the general principle, the argument is no longer a syllogism. It may, nevertheless, be a good mode of reasoning, but surely it is not a syllogism in the sense in which Archbishop Whately and other logical writers use the term. At the same time it appears to put the syllogism in the same place that we have assigned to it in the present work. It is received as one of the forms of reasoning; in some cases a very useful form, but not necessarily connected more than any other form with the reasoning process. And whether Mr. Mill gets his conclusion from the general proposition, or from certain facts of which the general proposition is a correct register, does not appear to be of much practical importance.

After a consideration of all the above writers, and of others whom we have consulted on the subject, we have arrived at the conclusion that the syllogism is only one of the forms of reasoning; a useful form, certainly, in some cases, but still only a *form*, and by no means necessarily connected with any of the *principles* of reasoning.

It has been said that all other modes of reasoning may be turned into syllogisms. It would be difficult to prove this, but it is not worth while to ask for proof. Let it be admitted that all other forms of reasoning may be turned into syllogisms, and that all syllogisms may be turned into other forms of reasoning. This convertibility shows that syllogism is only one of the forms in which all reasons

may be expressed. 'Another argument to prove that it is only a form is, that the mass of mankind reason well, and yet know nothing about it. None of the writers of the Old Testament knew anything about syllogism, nor have we any proof that it was known to the writers of the New. We are not aware that it has ever been known to the Chinese, or to any other people unacquainted with Greek. We are sure that the mass of the population in our own country are wholly unacquainted with it.

Seeing, then, that syllogism is one of the forms of reasoning, it may be well to inquire for what kinds of reasoning it is best adapted.

It does not appear to be well adapted for arguments founded on induction, or on analogy, or on mere probability. The conclusion of a syllogism should be a certainty, and a certain deduction from the premises. Let us take Mr. Mill's example:—

> "All men are mortal;
> The Duke of Wellington is a man;
> Therefore, the Duke of Wellington is mortal."

Here you will observe it is essential to the validity of this argument, that the first proposition should be universally true. Had it been said, All men (except one) are mortal; the Duke of Wellington is a man; we could not have inferred that the Duke of Wellington is mortal, for that excepted one might, for ought we know, be the Duke of Wellington.

It would appear from this example that the syllogism is not adapted for probable arguments, however high the degree of probability may be. Hence, as in the moral sciences, and in the ordinary affairs of life, we cannot always have more than a high degree of probability, it seems to follow that in these sciences, and in these affairs, we cannot always employ the syllogism.

The chief principle of reasoning for which the syllogism appears to be adapted, is that of genus and species, and here chiefly when the relation of genus and species is founded in nature. When we try to form this relation mentally, by simply changing the mode of expression, we may weaken our reasoning. We have shown this at page 67. In similar

cases we can rarely form a major proposition, capable of being proved to be universally true. We place ourselves by syllogism under the necessity of proving a universal, when the argument requires us to prove only a particular. And we attempt to prove by reasoning, a proposition that cannot be proved but by observation and experience.

Although an argument legitimately founded on any other relation than genus and species, such as the relation of subject and attribute, cause and effect, can seldom be so well expressed by syllogism, yet, when an argument is legitimately founded on the relation of genus and species, and that a natural, not an artificial relation, the syllogism will sometimes afford the means of expressing the argument with superior clearness. Perhaps this is the case in the example we have noticed. Were we to say, "As the Duke of Wellington is a man, he must be mortal;" or, "As all men are mortal, the Duke of Wellington must be mortal, for he is only a man;" or any similar mode of expression, we should not, perchance, express our meaning with as much clearness as in the syllogism.

While we are thus ready to admit that the syllogism is sometimes a useful form of reasoning, we do not admit that an argument derives greater strength from being put into this form. In fact, no argument obtains more strength by being expressed in one form more than in another. The advantage gained is in point of clearness, or in adaptation to the party to whom the argument may be addressed. The same form is not suitable for all occasions. The form which gives clearness and adaptation in one case may in another case be attended with obscurity and unsuitableness. The case in which syllogism may be used with advantage is, as we have said, in natural relations of genus and species. In many other cases we think it unsuitable, and in some probably injurious.

SECTION V.

REASONING BY COMPOUND SYLLOGISM.

"WE properly call those compound syllogisms, which are made of two or more single syllogisms, and may be resolved into them. The chief kinds are these: epichirema, dilemma, prosyllogismus, and sorites.

"I. Epichirema is a syllogism which contains the proof of the major or minor, or both, before it draws the conclusion. This is often used in writing, in public speeches, and in common conversation; that so each part of the discourse may be confirmed, and put out of doubt, as it moves on toward the conclusion which was chiefly designed. Take this instance:

"Sickness may be good for us; for it weans us from the pleasures of life, and makes us think of dying;

"But we are uneasy under sickness, which appears by our impatience, complaints, groanings, &c.;

"Therefore, we are uneasy sometimes under that which is good for us.

"Another instance you may see in Cicero's oration in defence of Milo, who had slain Clodius. His major proposition is, that 'it is lawful for one man to kill another who lies in wait to kill him;' which he proves from the custom of nations, from natural equity, examples, &c. His minor is, that Clodius 'laid wait for Milo;' which he proves by his arms, guards, &c.; and then infers the conclusion, that 'it was lawful for Milo to kill Clodius.'

"II. A Dilemma is an argument which divides the whole into all its parts or members by a disjunctive proposition, and then infers something concerning each part which is finally inferred concerning the whole. Instances of this are frequent; as, In this life we must either obey our vicious inclinations, or resist them: to obey them will bring sin and sorrow; to resist them is laborious and painful: therefore, we cannot be perfectly free from sorrow or pain in this life.

"A dilemma becomes faulty or ineffectual three ways:

First, When the members of the division are not well opposed, or not fully enumerated; for then the major is false. Secondly, When what is asserted concerning each part is not just; for then the minor is not true. Thirdly, When it may be retorted with equal force upon him who utters it.

"There was a famous ancient instance of this case, wherein a dilemma was retorted. Euathlus promised Protagoras a reward when he had taught him the art of pleading; and it was to be paid the first day that he gained any cause in the court. After a considerable time Protagoras goes to law with Euathlus for the reward, and uses this dilemma: 'Either the cause will go on my side, or on yours: if the cause goes on my side, you must pay me according to the sentence of the judge; if the cause goes on your side, you must pay me according to your bargain; therefore, whether the cause goes for me or against me, you must pay me the reward.' But Euathlus retorted this dilemma, thus: 'Either I shall gain the cause, or lose it; if I gain the cause, then nothing will be due to you according to the sentence of the judge; but if I lose the cause, nothing will be due to you according to my bargain; therefore, whether I lose or gain the cause, I will not pay you, for nothing will be due to you.'

"*Note* 1. A dilemma is usually described as though it always proved the absurdity, inconvenience, or unreasonableness of some opinion or practice; and this is the most common design of it: but it is plain, that it may also be used to prove the truth or advantage of anything proposed; as, In heaven we shall either have desires, or not: if we have no desires, then we have full satisfaction; if we have desires, they shall be satisfied as fast as they rise; therefore, in heaven we shall be completely satisfied.

"*Note* 2. This sort of argument may be composed of three or more members, and may be called a trilemma.

"III. A Prosyllogism is when two or more syllogisms are so connected together, that the conclusion of the former is the major or the minor of the following; as,

Blood cannot think; but the soul of man thinks; therefore, the soul of man is not blood: but the soul of a brute is his blood, according to the Scripture; therefore, the soul of man is different from the soul of a brute.

"IV. A Sorites is when several middle terms are chosen to connect one another successively in several propositions, till the last proposition connects its predicate with the first subject. Thus: All men of revenge have their souls often uneasy; uneasy souls are a plague to themselves; now to be one's own plague is folly in the extreme; therefore, all men of revenge are extreme fools.

"The Apostle (Rom. viii. 29) gives us an instance of this sort of argument, if it were reduced to exact form: 'Whom he foreknew, those he predestinated; whom he predestinated he called; whom he called he justified; whom he justified he glorified; therefore, whom he foreknew he glorified.'

"To these syllogisms it may not be improper to add induction, which is, when from several particular propositions we infer one general; as, The doctrine of the Socinians cannot be proved from the Gospels, it cannot be proved from the Acts of the Apostles, it cannot be proved from the Epistles, nor the Book of Revelation; therefore, it cannot be proved from the New Testament."—*Watts's Logic.*

We shall here give an example of each of these compound syllogisms:—

I.—THE EPICHIREMA.

Happiness is the result of certain habits;
Man has the power of acquiring those habits;
Therefore, man has the power of making himself happy.

The first and second of these propositions require to be separately proved. Here is the proof:—

1. Happiness is the result of certain habits.

"We find ourselves making a part of an existing universe, which neither ignorance nor wisdom, doubting nor confidence can

alter. If we know the order of which we are the subjects, and conform to it, we are happy. If we ignorantly or wilfully transgress it, the order is in no degree changed or impeded. It moves irresistibly on, and the opposition is crushed. How wisdom and benevolence are reconcilable with the permission of this ignorance and opposition; in other words, why partial evil exists in God's universe, it is not my object to inquire. It is enough for us to know, that, as far as human research has reached, or can reach, the more profoundly we investigate the subject, the more clearly are design, wisdom, and benevolence discoverable."

"All that we now know is, that the natural laws of this system are universal, invariable, unbending; that physical and moral tendencies are the same all over our world; and we have every reason to believe over all other worlds. Wherever moral beings keep in harmony with these laws, there is no instance in which happiness is not the result. Men never enjoy health, vigour, and felicity in disobedience to them. The whole infinite contrivance of everything above, around, and within us, appears directed to certain benevolent issues; and all the laws of nature are in perfect harmony with the whole constitution of men."

"In all positions man finds himself called upon, by the clear indications of the organic laws, to take that free and cheerful exercise, which is calculated to develope vigorous muscular, and nervous and mental action. The peasant digs, and the hunter chases for subsistence; and each finds at the same time health and cheerfulness. The penalty of the violation of this organic law by the indulgence of indolence is debility, enfeebled action both bodily and mental, dyspepsia with all its painful train, and finally death. On the other hand, the penalty of over exertion, debauchery, intemperance, and excess of every species, comes in other forms of disease and suffering. These laws, though not so obviously and palpably so, are as invariable and inevitable, as those of attraction or magnetism."

"If then, by any process of instruction, discipline, and mental force, we can influence our circumstances, banish grief, create cheerfulness, we can, in the same degree, reduce rules for the pursuit of happiness to a system; and make that system a matter of science. Can we not do this?"—*Art of Being Happy.*

2. Man has the power of acquiring these habits.

"The elements upon which we should operate are circumstances, habits, and modes of thinking and acting. The philosopher of circumstances denies that you can act upon these. But by his unwearied efforts to propagate his system, he proves that he does not himself act upon his avowed convictions. The im-

pulse of all our actions from birth to death, the spring of all our movements, is a conviction that, by the blessing and help of the Most High, we can alter and improve our condition. We have a consciousness, stronger than our reason, that we can control our circumstances. We can change our regimen and habits; and, by patience and perseverance, even our temperament. Every one can cite innumerable and most melancholy instances of those who have done it for evil. The habit of indulging in opium, tobacco, ardent spirits, or any of the pernicious narcotics, soon reduces the physical and mental constitution to that temperament in which those stimulants are felt to be necessary. A corresponding change is produced in the mind and disposition. The frequent and regular use of medicine, though it may have been wholly unnecessary at first, finally becomes an inveterate habit. No phenomenon of physiology is more striking than the facility with which the human constitution immediately commences a conformity to whatever change of circumstances, as of climate, habit, or aliment, we impose upon it. It is a most impressive proof, that the Creator has formed man capable of becoming the creature of all climates and conditions.

"If we may change our temperament both of body and mind for evil, as innumerable examples prove that we may, why not also for good? Our habits certainly are very much under our control: and our modes of thinking, however little the process may have been explained, are in some way shaped by our voluntary discipline. We have powers of self-command, as every one who has made the effort to exercise them must be conscious. We have inexhaustible moral force for self-direction, if we will only recognise and exert it. We owe most of our disgusts and disappointments, our corroding passions and unreasonable desires, our fretfulness, gloom and self-torment, neither to nature nor fate; but to ourselves, and our reckless indifference to those rules that ought to guide our pursuit of happiness. Let a higher education and a truer wisdom detach us from our passions, dispel the mists of opinion, and silence the authority of example. Let us commence the pursuit of happiness on the right course, and seek it where alone it is to be found. Equanimity and moderation will shed their mild radiance upon our enjoyments; and in our reverses we shall summon resignation and force of character: and, according to the sublime ancient maxim, we shall, in some useful degree, become masters of events and of ourselves."—*Ibid.*

The conclusion follows, that man has the power of making himself happy.

II.—The Dilemma.

The following are examples of the dilemma:—

"And there were four leprous men at the entering in of the gate: and they said one to another, Why sit we here until we die? If we say, We will enter into the city, then the famine is in the city, and we shall die there: and if we sit still here, we die also. Now therefore come, and let us fall unto the host of the Assyrians: if they save us alive, we shall live; and if they kill us, we shall but die."—2 *Kings* vii. 3, 4.

"And he answered and said unto them, I will also ask you one thing; and answer me: The baptism of John, was it from heaven, or of men? And they reasoned with themselves, saying, If we shall say, From heaven; he will say, Why then believed ye him not? But and if we say, Of men; all the people will stone us; for they be persuaded that John was a prophet. And they answered, that they could not tell whence it was."—*Luke* xx. 3—7.

"Jesus answered him, If I have spoken evil, bear witness of the evil: but if well, why smitest thou me?"—*John* xviii. 23.

"Either Christ was an impostor, or he was not.—If he was an impostor, we have the inconceivable phenomenon of a base man practising virtue, self-denial, charity, forgiveness of injuries, through his whole life, in scourging, contumely, and even crucifixion. Is it philosophical to suppose that a bad man would take so much pains to make men good? But if he was not an impostor, then he has told the truth, and we must believe him."—*The Message Bird.*

Mr. Burke uses the dilemma in arguing against public debts.—"If," says he, "governments provide for these debts by public impositions, they perish by becoming odious to the people. If they do not provide for them, they will be undone by the efforts of the most dangerous of all parties, I mean an extensive discontented monied interest, injured and not destroyed." The objections to the law which prohibits the payment of wages in goods, have been made in the same form. "Either the law will be generally observed, or it will not. If it be generally observed, it will frequently prevent the workmen from procuring employment, since manufacturers may be able to pay wages in goods when they are totally incapable of furnishing money. If it be not generally observed, which

is the most probable case, it will be the means of giving an advantage to those who are dishonest and loose in principle,—over the strictly upright and conscientious manufacturers without any benefit to the workmen." Colonel Torrens employs the dilemma in arguing against the construction of canals (or other public works) by the Government. "If canals could be profitably opened, it would not only be superfluous and absurd, but positively pernicious for Government to undertake them; for in this case, private interests would accomplish the object far more economically. If they could *not* be opened with a profit, it would be pernicious to force capital into an unproductive channel. In either case, therefore, nothing but mischief can result from the interference of Government."

In the same form of reasoning Monsieur Say argues against Sumptuary Laws. "Sumptuary Laws are superfluous and unjust. The indulgence proscribed is either within the means of the individual or not. In the former case it is an act of oppression to prohibit a gratification involving no injury to others; in the latter case, it is, at all events, nugatory to do so, for there is no occasion for legal interference where pecuniary circumstances alone are an effectual bar." The Rev. Mr. Seymour, in his "Mornings with the Jesuits," attacks the doctrine of priestly absolution by way of dilemma:—"At the time of confession the penitent is sincere, or he is not. If he is sincere in his repentance, then God has already forgiven him, and absolution by the priest is useless. If he is not sincere, the absolution by the priest is of no value according to the doctrine of the Catholic Church. Therefore, whether the penitent is sincere or not, the priestly absolution is useless." The Rev. T. Binney employed the following dilemma in reference to Cardinal Wiseman:—

"Dr. Wiseman is either an Englishman, or he is not. He was born in Spain, but of English or Irish parents. He is generally spoken of as an Englishman. If he is so, and accepts a title from a foreign potentate, he cannot use it legally here without receiving the Queen's permission." If he is not an Englishman, though he might be known amongst us by his style and title, like any other foreigner of rank, he could not exercise,

in relation to Englishmen, those powers which, in Italy, his rank might confer. Lord Brougham could not be at once a French citizen and an English lord. Can Dr. Wiseman be at the same time an English citizen, and an Italian prince?"

The Rev. Mr. James of Birmingham justifies the course he has taken, as a Dissenter, by the following dilemma:—

"I rejoice to think that I have private friendships and public co-operation with many both of the clergy and laity of the Church of England, between whom and myself it is perfectly understood that we are each allowed to hold, to advocate, and to diffuse his own sentiments on ecclesiastical polity, and so far to oppose one another, but all in a spirit of brotherly kindness and charity. And it is satisfactory to me to recollect that in the present contest, I found a basis *on which I could be associated against Popery* with these good men, without as I think at all compromising my Nonconformity. I never could for a moment consider the present movement on the part of the Church of England as a mere contest between the two rival hierarchies, but a contest between Rome and Protestant England; *but supposing it were only a battle between the two Churches*, it could be no matter of indifference to me which should prevail, since the one is Protestant and the other Roman Catholic; the one foreign, the other domestic; the one is tolerant, the other exclusive and persecuting; the one is within, the other without the limits of the English Constitution; and therefore against the one I can raise my opposition by my representatives in the Legislature, but not against the other, since it is governed by a Foreign Power."

The following is the language of Lord Beaumont, a Catholic nobleman, with respect to the recent appointment to English bishoprics by the Pope:—

"The Pope by his ill-advised measures has placed the Roman Catholics in this country in a position where they must either break with Rome, or violate their allegiance to the constitution of these realms; they must either consider the Papal bull as null and void, or assert the right of a foreign prince to create, by his sovereign authority, English titles, and to erect English bishoprics. To send a bishop to Beverley for the spiritual direction of the Roman Catholic clergy in Yorkshire, and to create a see of Beverley, are two very different things—the one is allowed by the tolerant laws of the country; the other requires territorial dominion and sovereign power within the country. If you deny

that this country is a fief of Rome, and that the Pontiff has any dominion over it, you deny his power to create a territorial see, and you condemn the late bull as 'sound and fury, signifying nothing.' If, on the contrary, you admit his power to raise Westminster into an archbishopric, and Beverley into a bishopric, you make over to the Pope a power which, according to the constitution, rests solely with the Queen and her Parliament, and thereby infringe the prerogative of the one and interfere with the authority of the other. It is impossible to act up to the spirit of the British constitution, and at the same time to acknowledge the jurisdiction of the Pope in local matters. Such is the dilemma in which the lately published bull places the English Roman Catholic."

The Earl of St. Germain, in assigning reasons for not signing an Address to her Majesty against "Papal Aggression," uses the following dilemma:—

"The law does not recognise the right of the Pope to create bishoprics, or to appoint bishops with territorial titles in Ireland, any more that it does in England. Parliament in proceeding to legislate on the subject will, therefore, find itself in this dilemma; either it must prohibit in England that which it permits in Ireland, or it must prohibit in Ireland that which has been immemorially done in that country without let or hindrance. By taking the former course, Parliament will destroy the unity of the Church, and thereby weaken its position in Ireland; by taking the latter, it will cause great and general discontent among the Roman Catholics in Ireland, will increase the difficulty of governing that country, and will encumber the statute book with a law, destined, like so many others, to become a dead letter."

"If fat men ride, they tire the horse,
And if they walk, themselves—that's worse;
Travel at all, they are at best,
Either oppressors, or opprest."

"I will always place restrictive laws in this dilemma: Either you agree that you do produce scarcity, or you do not agree to it. If you agree to it, you confess, as a consequence, that you inflict upon the people all the harm you can. If you do not agree to it, then you deny having restricted supply and raised prices, and, consequently, you deny having favoured the producer. You are either hurtful or inefficient; you cannot be useful."—*Bastiat's Popular Fallacies regarding General Interests.*

"Let us, then, while engaged in the honourable pursuit of wealth, engage at the same time, with at least equal eagerness,

the pursuit of knowledge. *If Providence should smile on our exertions to obtain wealth,* our intellectual attainments will enable us to enjoy that wealth with elegance and taste—to employ that wealth, so as to promote the happiness of others—to move with honour in that higher class of society to which our wealth will introduce us—and to discharge faithfully any public duties which our country's voice may call us to perform. *But if, on the other hand,* the winds of heaven should scatter our ships, the fire devour our storehouses, or the sons of wickedness rob us of the fruits of our industry,—still, amid the wreck of our fortunes, our intellectual and moral worth will secure the respect of those around us, and we shall possess within ourselves a source of happiness more pure, more serene, more constant than all the wealth and all the luxuries of India can supply. 'Happy is the man that findeth wisdom, and the man that getteth understanding. For the merchandise of it is better than the merchandise of silver, and the gain thereof than fine gold.'"—*Lectures on Ancient Commerce.*

III.—The Trilemma.

It has been remarked as a characteristic of the late Sir Robert Peel, that in introducing his measures to the House of Commons, he often used the trilemma. "Three courses are before us—to go backward, to stand still, to go forward. We cannot go backward; we cannot stand still; we must, then, go forward."

"Go and say unto David, Thus saith the Lord, I offer thee three things; choose thee one of them, that I may do it unto thee. So Gad came to David, and told him, and said unto him, Shall seven years of famine come unto thee in thy land? or wilt thou flee three months before thine enemies, while they pursue thee? or that there be three days' pestilence in thy land? now advise, and see what answer I shall return to him that sent me. And David said unto Gad, I am in a great strait: let us fall now into the hand of the Lord; for his mercies are great: and let me not fall into the hand of men. So the Lord sent a pestilence upon Israel from the morning even to the time appointed: and there died of the people from Dan even to Beer-sheba seventy thousand men."—2 *Sam.* xxiv. 12—15.

Sometimes a subject is divided into three parts, with the view of disproving two of these parts in order to affirm the third. Thus, workmen must have fair wages—not too high or too low.

"And each of these employers is forced to pay each of his workmen as high wages as the work which the workman does, and the price which goods sell for, will allow. For *if he paid less*, his workmen would leave him to get better wages elsewhere; and *if he paid more*, he would lose instead of gaining, by employing them; and if he were to pay every workman alike, whatever were the quantity or goodness of the work done by him, it is certain that in most cases he would be paying either too much or too little: too much to the bad workmen, and too little to the good ones. Besides this, when workmen are not paid according to their merit, there are scarcely *any* good ones: because when they see that they are no gainers by working well, and working hard, they all become idle or careless."—*Easy Lessons on Money Matters.*

Mr. Gilfillan thus describes the Scripture idea of the Universe:—

"There are three methods of contemplating the universe. These are the material, the shadowy, and the mediatorial. The materialist looks upon it as the only reality. It is a vast solid fact, for ever burning and rolling around, below and above him. The idealist, on the contrary, regards it as a shadow, a mode of mind, an infinite projection of his own thought. The man who stands between the two extremes, looks on nature as a great but not ultimate or everlasting scheme of mediation or compromise between pure and absolute spirit and the incarnate soul of man. To the materialist there is an altar, the lighted, heaven-high, but no God. To the idealist there is a God, but no altar. He who holds the theory of mediation has the Great Spirit as his God, and the universe as the altar on which he presents the gift of his worship or poetic praise."—*Gilfillan's Bards of the Bible.*

The following trilemma has been employed in defence of the writings of the Old Testament:—"If the books of the Old Testament be forgeries, they must have been invented by either the Gentiles, the Christians, or the Jews. They could not have been invented by the Gentiles, because they were all ignorant of the history and sacred rites of the Hebrews; they could not have been invented by the Christians, as no Christians existed previous to the introduction of Christianity; they could not have been invented by the Jews, because they contain difficult laws and rules, and relate all their idolatrous crimes and punishments, which would not have been inserted if the

writings had been forged by Jews; therefore, these writings could not have been forged at all."

IV.—The Prosyllogism.

Happiness is the result of certain habits;
Man has the power of acquiring those habits;
Therefore, man has the power of making himself happy.

Man has the power of making himself happy;
Every wise man uses this power;
Therefore, every wise man is a happy man.

V.—The Sorites.

"Now if Christ be preached that he rose from the dead, how say some among you that there is no resurrection of the dead? But if there be no resurrection of the dead, then is Christ not risen: and if Christ be not risen, then is our preaching vain, and your faith is also vain. Yea, and we are found false witnesses of God; because we have testified of God that he raised up Christ: whom he raised not up, if so be that the dead rise not. For if the dead rise not, then is not Christ raised."—*1 Cor.* xv. 12—16.

This argument may be placed in the form of a sorites, thus:—

If Christ rose from the dead, it must have been through a divine power.

If Christ was raised from the dead by divine power, it proved that he was a prophet sent of God.

If he was a prophet sent of God, then all his predictions will be accomplished.

If all his predictions will be accomplished, then his prediction that the dead shall be raised will be accomplished.

Therefore, if Christ rose from the dead, the dead will be raised.

Other Scriptural examples may be seen in Rom. viii. 29, 30; and x. 13—15.

The following is the train of reasoning followed by those who adopt the principle of the Act of 1844 with reference to the administration of the currency:—

A favourable state of the Exchange will cause an importation of gold.

This importation of gold will cause a corresponding issue of bank notes.

This issue of bank notes will cause a general advance in the prices of commodities.

This general advance of prices will check exportation and encourage importation.

This decrease of exports and increase of imports will turn the exchanges against us.

The exchange being turned against us, will cause a demand for the exportation of gold.

This demand for the exportation of gold will cause the notes to be taken to the Bank of England, and payment demanded in gold.

The notes in circulation will thus be diminished, and the currency will again be placed in a sound state.

The sorites, it will be seen, embraces a number of arguments connected together. It is therefore called a chain of reasoning. It resembles a chain in this, that if one link be broken, the whole argument is destroyed. In the example we have just given, the third link is denied by Mr. Tooke, who contends that an increase in the amount of the circulation has no effect on the prices of commodities. Were this doctrine demonstrated, the chain would be broken, and the whole reasoning annihilated.

The sorites is the form of reasoning employed in mathematical deductions. If you pay attention, I will give you an illustration of this, and explain it so clearly, that you will be able to understand all the operations, even though you may not have learned algebra. I take the question from one of my old school-books:

"When first the marriage knot was tied
Betwixt my wife and me,
My age did hers as far exceed
As three times three does three;
But when ten years and half ten years
We man and wife had been,
Her age came up as near to mine
As eight is to sixteen:
Now tell me, I pray,
What were our ages on the wedding-day?

I will presume at starting that you know the sign + denotes *plus* or more, the sign − denotes *minus* or less, × denotes multiplication, and = denotes equality. Now then we will begin. The figures 1, 2, &c., at your left hand express the number of operations.

1. Let the age of the wife on the wedding-day be represented by the letter x.

2. Then, as the husband's age to the wife's is as "three times three to three," his age must be three times x, say $3x$.

3. Ten years and half ten years are equal to fifteen years.

4. At the end of fifteen years the wife's age will be $x + 15$, that is, x added to 15.

5. And the husband's age will be $3x + 15$, that is, three times x added to 15.

6. By the question, the wife's and the husband's ages should at this period be in the proportion of 8 to 16. As 8 is to 16 so is $x + 15$ to $3x + 15$; expressed thus;

$$8 : 16 :: x + 15 : 3x + 15.$$

7. Now you know by the rule of three, that if the two extremes (that is, the first and the fourth terms) be multiplied together, the product will be the same as the product of the multiplication of the two means (that is, the second and third terms). Now,

$3x + 15$ multiplied by 8 give $24x + 120$, and
$x + 15$ multiplied by 16 give $16x + 240$.

8. As these two products are equal to each other, we thus form our equation;

$$24x + 120 = 16x + 240.$$

You will read the equation thus,—Twenty-four x plus 120 equal sixteen x plus 240.

9. Our next operation will be to transpose the $16x$ to the other side of the equation. In doing this we must of course change the sign. As it is now plus, we must make it minus. Our equation will then stand thus;

$$24x - 16x + 120 = 240;$$

that is, $24x$ minus $16x$ plus 120 equals 240.

10. We will now deduct the $-16x$ from the $24x$. The equation will stand thus;

$$8x + 120 = 240.$$

11. We will now transpose the 120 to the other side of the equation, changing its sign, of course, thus;

$$8x = 240 - 120;$$

that is, $8x$ equals 240 minus 120.

12. We will now deduct the -120 from the 240, and the equation will stand thus;

$$8x = 120.$$

13. We will now divide both sides of the equation by 8, and we shall have, $1x = 15$.

14. Now then we have discovered the value of x; that is, we have found that the age of the wife on the wedding-day was 15 years. And as the husband's age was as three times three to three, his age must have been 45. Then after ten years and half ten years—that is, 15 years—the wife's age would be 30 and the husband's 60, which is as eight is to sixteen.

You see what a beautiful process of reasoning we have gone through, and with what certainty we have arrived at the result. This is called mathematical reasoning. It is the kind of reasoning employed in Algebra, Geometry, Astronomy, Navigation, and the other Mathematical Sciences.

I will close this Section by another problem:—

"While I was coursing on the forest grounds,
Up starts a hare before my two greyhounds;
The dogs, being light of foot, did fairly run,
Unto *her* fifteen rods just twenty-one.
The distance that she started up before
Was fourscore fifteen rods just and no more.
I pray you, scholar, unto me declare,
How far they ran before they caught the hare?"

1. For the distance they ran put x.
2. Then the distance the hare ran will be $x - 95$ rods.
3. Then as 21 is to 15 so is x to $x - 95$.

$$21 : 15 :: x : x - 95$$

4. Then multiply the two extremes together and the two means together, and we have an equation, thus:—

$$21x - 1995 = 15x$$

5. $21x = 15x + 1995$
6. $21x - 15x = 1995$
7. $6x = 1995$
8. $x = 332\frac{1}{2}$ rods.

Distance run by the dogs, $332\frac{1}{2}$ rods.
Do. (95 less) run by the hare, $237\frac{1}{2}$ do.
As 21 is to 15 so is $332\frac{1}{2}$ to $237\frac{1}{2}$

SECTION VI.

SERIES OF REASONINGS.

We have shown that a chain of reasoning consists of a number of reasons so connected with each other, that the failure of one reason would destroy the whole argument. A series of reasoning denotes a number of reasons all bearing to prove the same sentiment, but so far unconnected with each other, that the failure of one reason does not weaken the force of the others.

It is impossible to lay down rules whereby a number of reasons may be so arranged as to produce the best effect in establishing the point for which they are adduced. Indeed, people who are sufficiently skilled in logic to be able to maintain their sentiments in a set discourse, must have acquired that systematic habit of mind which will suggest the best rules for the arrangement of their thoughts. For the sake of the young we will transcribe a few rules, which have chiefly a reference to the writing of themes, published by an author who has had great experience in tuition:—

"In treating of method in reasoning, it is common to divide it into two kinds, *analysis* and *synthesis*. All, however, that seems necessary to be said in this treatise concerning these distinctions, is, that in the mode of reasoning called *synthesis*, the proposition is the conclusion sought; but in the reasoning called *analysis*, the conclusion cannot be previously proposed; for till the arguments on which it depends are unfolded, it is presumed to be unknown. In reasoning synthetically, the arguer knows beforehand what is to be established; and he may, at his option, propose it first, and add his arguments afterwards, or he may neglect to state the intended proposition, till he has brought forward what he has to advance in support of it. In reasoning analytically, the arguer lays down nothing to be proved, nor has he any foreknown conclusion in view, but he goes on, unfolding one argument after another, till he reaches a conclusion. Analysis, therefore, is the way by which we attain truth; synthesis, that by which we communicate it. We pursue the method of analysis, when, not having formed our judgment on a subject, we think to ourselves in order to form one: we pursue the method of

synthesis, when our judgment is formed, and we undertake to convince others. It is scarcely necessary to add that in writing themes, the principle on which we proceed is synthesis.

"Before anything more particular is advanced on the method of writing themes, it must be mentioned, that the manner in which a theme is given out, determines what latitude is allowed to the writer in treating it. When a theme is given out thus—'On education,' 'On a knowledge of the world'—the theme may be called unlimited; for the writer is left to lay down any propositions to be proved which he may think fit, provided they bear a due relation to the subject. But a particular proposition being laid down to be proved, necessarily limits the theme; as for instance, when a theme is given out thus—'Man is the creature of education;' 'A proper knowledge of the world is favourable to virtue.' This kind of theme is called a *thesis*,—a Greek word signifying position or proposition;—in the plural, *theses*. An unlimited theme generally contains many theses; for whenever the writer goes into a new branch of his subject, he must lay down, or have in view, some new proposition,—that is, a thesis. In a limited theme there is but one main proposition, to which every other ought to be subservient. This main proposition is called, by distinction, the *thesis*, and the theme which is written in support of it, takes the same name."

"Suppose the theme given out to be 'Friendship;'—teachers recommend the pupil to consider it under the following heads:—the Definition; the Cause; the state in ancient and in modern times; the Advantages; the Disadvantages. Proper answers to the following questions will form such a theme as is here required:—

"1. What is friendship? 2. What is the cause of friendship? 3. What was anciently thought of friendship, and what examples are on record? 4. What is friendship often found to be in these days? 5. What are the benefits of true friendship? 6. What are the evils of false friendship?"

"When, instead of an unlimited title, a thesis is given out to be proved, teachers recommend the following heads as helps to find the arguments:—the Proposition; the Reason; the Confirmation; the Simile; the Testimony; the Example; the Conclusion. Under the first head, the writer restates his thesis in such a shape, that the arguments he designs to use will easily connect with it. Under the second, he brings forth the strongest direct internal argument he can find in proof of it,—that is, from the nature of the thing, from enumeration, from the cause, the effect, the adjuncts, the antecedents, or the consequents. Under the third, he tries to strengthen his proof by showing the absurdity of the contrary proposition, or by advancing some fresh argument of whatever kind that is not taken from the same source as

the preceding, and does not anticipate those that are to follow. Under the fourth, he uses an argument from similitude. These are internal arguments. Under the next two heads, he brings forward testimonies or authorities from authors of repute, and facts from history. And lastly, he forms his conclusion not merely in the words of the proposition with which he set out, (though in strictness the conclusion would be nothing more,) but with some practical inference or inferences appended to it."—*Practical Logic, or Hints to Theme-Writers. By B. H. Smart.*

We shall now present the reader with some examples of propositions being proved by series of reasonings.

THE ADVANTAGES OF NATIONAL EDUCATION.

From an Address delivered at the opening of the Kingstown Schools, near Dublin, in October 1850.—*Irish Paper.*

"Although the chief objects of education, as conducted in these schools, is to promote the cause of religion, yet there are many collateral advantages which should not be passed over unnoticed. Education *enables each individual to rise into that station of society for which his intellectual and moral qualities may be adapted.* Education supplies the elements by which each mind is raised to the station to which his specific gravity entitles him. When education becomes universal, the elevation of persons born in low circumstances in life to stations they have gained by their talents will be as common as it is now rare. *Education will cause new and vaster discoveries to be made in the arts and sciences.* The education of the British people, by Whitfield, Wesley, and others, preceded mechanics' institutions and literary societies for the elevation of the lower and middle classes. To the extension of education may be attributed the recent discoveries affecting railroads, steamboats, and the electric telegraph. The human mind was as capable of making these discoveries centuries ago, but education was then limited. The greater number of minds you educate, the greater the probability of new discoveries. We have never yet seen an educated nation. We can scarcely calculate the effects such a nation would produce on the scientific, the social, and the moral condition of mankind. These schools, whose auspicious commencement we now celebrate, will form one effort among countless others being made towards producing these effects. *Let it never be forgotten that education promotes the cause of religion.* Among other things, it places before the mind more striking manifestations of the greatness, wisdom, and goodness of the Divine Being, and thus stimulates to adoration and gratitude. Young has said,—

'An undevout *astronomer* is mad.'

There are many other branches of physical science, and also many branches of moral science, the legitimate effects of which are to awaken in the mind feelings and principles of religion. But the educated man has reasons within himself independently of these. The capacities and powers of every being betoken his destiny. Man is endowed with a capacity for indefinite improvement. We may, therefore, infer that the mind is destined for a state of indefinite improvement. Man has longings and aspirations after immortality; hence we have an indication that he is destined to be immortal. A mind which has thus become conscious of its own vastness and destiny will endeavour by a lofty meditation to anticipate its future dignity, by looking forward to that state where man in all the grandeur of unclouded reason, and in all the beauty of spotless innocence, will attain the full perfection of his being, and be conformed to the image of that Supreme Intelligence by whom his intellectual powers were conferred."

The Industrial Exhibition.

From an Address delivered by the Earl of Carlisle at the Meeting at Westminster.

"The object of the undertaking was too generally known to call for explanation, and too generally approved of throughout the country to stand in need of defence. He was not a member of the Royal Commission to which the office had been entrusted of superintending the management and execution of the project, and he was therefore not called upon to enlighten them with reference to the specific details. He could only make the most general remarks, and submit the most general grounds which, as he conceived, this undertaking put forward for their support. The first ground was one of a very general character, because it rested on the constitution of our common nature. He liked the occasional recurrence of celebrations, pomps, festivities, commemorations—call them by whatever name you please. They seemed to him in accordance with the feelings and instincts implanted in the human breast. He did not call to mind any country or era which had dispensed with them. In the primitive east, both in ancient and in our own times, they were, for the most part, associated with ceremonies of worship, with uncouth, and too often horrid rites. In more enlightened and civilized Greece they consisted of public games, in displays of physical strength, ennobled, it was true, by the susceptibility of her people to all the forms of taste and beauty, and recorded in immortal song. Among the sterner Romans they generally accompanied the long train of martial triumphs up the steep ascent of the Capitol, or the more degrading spectacles which summoned the

men, and, alas! the women of Rome, to witness the dying throes of the gladiator, or the bloody struggles of captives and wild beasts. In our own age and country they naturally wore a softer aspect; but still, in his judgment, had been too much confined to the easier and wealthier classes, or connected with the pursuits of frivolity and dissipation. It seemed, therefore, but natural and becoming at the period of the world at which we were arrived, that industry, that skill, that enterprise should in their turn have their own ovation, their own triumph, their own high holiday, where the workmen and workwomen of the world might enjoy a day's pause from their engrossing toils for the purpose of seeing what their fellow-workmen and workwomen were doing and could do all the world over—that they might see, not barbaric rites, but useful inventions; not exhibitions of physical prowess in the prize ring, or the foot-race, but results which interested the mind and elevated the soul; not suppliant provinces and chained captives, but the pursuits of peace and of civilization—not crowded saloons and heated theatres, but an arena where all ranks might mingle, where all might learn, and all might profit by what they saw. This was one of the grounds which the undertaking put forward for support. It might be reckoned one, perhaps, rather of a sentimental and fanciful character; he would proceed to one somewhat more practical. The exhibition, carried into effect on the scale proposed, would give people in all pursuits and professions, in all classes and callings, the opportunity of examining and ascertaining methods by which the work which formed the daily business of their lives might be expedited, facilitated, assisted, and improved. There might be the textures which best suited the climate in which we lived. There might be the tools and implements calculated to lighten or shorten labour. There might be the discoveries in mechanics which should mould to the purpose of man the unvarying attributes of matter, space, and time; discoveries of which we, perhaps, had long been in the unconscious need, but which had long been beneficially adopted in other countries. He could not but look forward with pleasure and hope to the evidences which our countrymen would afford of the distinguished progress they had made in the pursuits of civilized life, and especially in those which interested most permanently the well-being and comfort of the millions. And though he could not forget, on this occasion, as he could not forget on any occasion, his long connexion with a district which had attained a marked eminence in all these departments of production—the West Riding of Yorkshire, the region of our cutlery, of our hardware, of our great woollen and worsted manufactures—yet he must say, that he not only anticipated advantage to the country from our victories on this occasion, but also from our defeats. It was

only when we could compare and put side by side what we could not do and what we were not with what we could do and with what we were, that we could attain the true measure of our superiority and of our deficiencies. Nations, equally with individuals, should say, after Brutus,—

'I should be glad to learn of better men.'"

The Industrial Exhibition.

From a Lecture to Young Men on the Instincts of Industry, by the Rev. S. Martin:

"A Word about the coming Exhibition.—We rejoice in this undertaking. Many circumstances connected with it are intensely interesting. And among these circumstances is the fact that Prince Albert originated it. It is well for the country that *The Prince* is a lover of the useful arts. Had he been devoted to the dark arts of the race-course and gambling-table, some that are now against him would have been for him. We congratulate the country that so far as our imperfect knowledge extends, the husband of our Queen is in intelligence, studiousness, healthful activity, morality and endeavour to uphold what is right, an example to young men. He has not the name of king, but in good social influence he is a king. *That such an Exhibition is possible* in our times is another pleasing circumstance. The nation is not preparing for a contest of arms, but for the peaceful competitions of Industry. Europe and the world might have been in a state to render this impossible. Let us thank God an Exhibition of Universal Industry is possible. *The mere building for the Exhibition* has called forth ingenuity that otherwise would have been dormant. Glass and iron may do a yet nobler work in the country—cheaper buildings both for domestic and public purposes may be raised after this example—and it is said that the Tax on Windows will by the reflections of the Palace of Glass be for ever abolished. *Skill has been working all* the world over; and when the products are exhibited—mind will be put in motion—hints will be given—aptitudes will be discerned—clues will be taken—comparisons instituted and analogies seen. Already the industrial world has felt the stimulus. There has been invention and discovery. But when the products of the industrial nations shall be exposed to view, the effect will be beyond human calculation. As the barren rock is made an island by suns and frosts—by birds and creeping things—by sea-weeds and sea-reptiles—each contributing to fertility its own peculiar influence—and as the most fruitful country is rendered more productive, and the most lovely garden is made more beautiful by the casting in of seeds and by the planting of shrubs

and trees—so many a mind that is now barren shall by the Exhibition of Industry be sown with useful thoughts and bear fruit in useful things—and minds now fertile, by more cultivation shall yield a richer produce—and the world shall give a more glorious increase for the Industrial Exhibition of 1851."

The Permanency of Modern Civilization.

"A youthful student, returning from a journey which he had undertaken for the purpose of viewing some newly-discovered Roman coins, became fatigued, and reclining beneath the spreading branches of an oak, he sank into a profound meditation. His thoughts were directed by the subject of his recent investigations. 'Yes,' he exclaimed, 'it must be so; the civilization of the moderns, like that of the ancients, will decline: it is the law of nature. The flower at my feet will wither by to-morrow's noon. This forest will in a few revolving months be bereft of its foliage. The sun is now on its decline, and will shortly fall below the horizon. The surface of the earth, now clothed with beauty, will soon be stripped of all its charms, by the ruffian hand of winter. Science is no doubt subject to similar revolutions. Where are the glories of Egypt and Constantinople? where now is the learning of Persia and Arabia? and what are the modern characters of Athens and of Rome? Ah, Rome, how art thou fallen! We seek thy honours beneath the clod: the monuments of thy greatness are buried in the earth. How many of thy arts are lost, never to be restored! Neither eminent science, nor extensive dominion, nor military prowess, could prevent thy fall! And what a long and dreary night succeeded thy meridian splendour? The lapse of ages, impelling wave after wave, has hitherto overwhelmed all human greatness. Modern science will no doubt be subject to a similar doom, and sink into the abyss of oblivion. Yes, in a few years all the discoveries in art will be forgotten—all our labours in science will be unknown—our exertions in literature will be buried in darkness. The world will again be immersed in barbarism, and exhibit no more traces of its present civilization, than is to be found of the loveliness of summer after the devastations of a winter's storm.'

"An aged philosopher who had overheard this soliloquy, now approached: 'My son,' he exclaimed, 'despair not of the permanency of modern science: the waves of time have indeed washed away the frail fabrics of ancient institutions; the leaves of ancient lore have, it is true, withered away, and even the tree was plucked up by its roots by the hand of the Barbarian: but does that justify the supposition, that modern science will share a similar fate? Listen now to me, and perceive how different are the cases from each other:—

"'Knowledge was never general among the ancients: a few favoured individuals were admitted to the temple of science, and were initiated into the knowledge of what were then her mysteries; but the mass of the people were excluded, and remained untaught: the necessary time and expense were an eternal bar to their attainment of knowledge. With us education will soon be universal: knowledge, like the light of heaven, is now poured over all the land. Had the mass of the people been educated, when the barbarians overthrew the Roman empire, the conquered would soon have civilized the conquerors, and science would have been preserved. The Tartars conquered the Chinese; the Romans conquered the Greeks: but these events did not destroy, but extended the triumphs of civilization.

"'The ancients were unacquainted with the art of printing. The student, in ancient times, attended the lectures of his master, and from his oral instructions obtained a knowledge of the science he wished to learn. The arts of ancient times were enclosed in manuscripts, and placed in the libraries of the schools; hence, when these libraries were destroyed, all knowledge was destroyed. Then science was placed in large reservoirs, and those who had leisure and means, might resort thither and drink: but the art of printing has supplied aqueducts, and conveyances, by which the streams of knowledge are conducted to every private habitation.

"'The art of war, too, has undergone an alteration, which is friendly to civilization. In ancient times, poor nations conquered the wealthy, and the barbarous those which were civilized. The invention of gunpowder, by rendering wars less frequent and less destructive, has been productive of advantage to mankind. Our fortified places cannot now be taken by barbarians. War is now expensive and systematic; and in the conflict all the advantages are on the side of the wealthy and the civilized. Civilization found the Genius of War in a savage state; she taught him, and disciplined him; and now, in return, the Genius of War protects and extends the empire of Civilization.

"'But, were we less able to repel the attacks of barbarians, from whence are those barbarians to arrive? Where are now the forests, from which, as from a hive, they are to issue forth, and devastate civilized Europe? Is it from the empire of the Czar? Is it not the most thinly populated country of Europe? And even had it been more populous, or more powerful, has it manifested any desire to exterminate the arts?

"'But suppose, in defiance of all probability, that a horde of savages may again issue from the regions of the North: suppose them to be successful, and to effect what Napoleon, with all his gigantic powers and his immense resources, could never effect—the subjugation of Europe,—have we not another advantage'

over the ancients? Have we not an immense navigation? Have we not numerous ships? Could we not take our arts and our sciences, and carry them to distant nations, to which barbarians could not follow us? No; the lamp of science could not be extinguished—it would be rekindled in a distant hemisphere, and its piercing rays would illumine the seats of its former glory.'"—*The Author.*

Social Responsibility.

"It is not consistent with the teaching of our intellectual faculties, nor with the impulses of our moral feelings, that a Being of immaculate holiness and inflexible justice, and possessed, moreover, of omniscience and omnipotence, should permit, in even a single instance, that virtue should go unrewarded, and vice should remain unpunished. If the Creator of the world were not a righteous Being, he would not have implanted a love of righteousness in the minds of his creatures; and if he be a righteous Being, it is reasonable to expect that his righteousness should appear in all the operations of his moral government. And as we find this is not universally the case, we are driven to the conclusion, that the present state is not a state of final retribution; that the enjoyments and the afflictions of the present life are intended chiefly as instruments of moral discipline; and that there is a future state of existence, in which the final distribution of rewards and punishments will take place. Thus reason concurs with Revelation in teaching us that 'it is appointed unto men once to die, and *after that* the judgment.' The inequalities of the present world will thus be rectified in the next, and 'every man will be rewarded according to his works.'

"But, however satisfactory this solution of the difficulty may be with regard to individuals, it does not apply to the case of public companies. Their existence commences and terminates in the present world, and they must be rewarded or punished in the present world, or they will not be punished or rewarded at all. In the latter case they are exempted from the moral government of God. With them virtue has no reward and vice no punishment. In reply to any exhortations to perform their moral and religious duties, they may exclaim, 'What is the Almighty, that we should serve him, and what profit should we have if we pray unto him?' 'We know not the Lord, neither will we obey his voice.' As, however, we cannot suppose that God has exempted public companies from his moral government, we must infer that they are punished or rewarded in the present state.

"This conclusion rests upon the same evidence as the argument we have just stated. In the former case the argument stands thus:—

The Righteous Governor of the world must reward the good and punish the wicked.

But this is not done in the present world.

Therefore, there must be a future world, in which this retribution will take place.

Our present argument stands thus:—

The Righteous Governor of the world must reward the good and punish the wicked, whether those actions are performed by public bodies, or private individuals.

But the public companies who now perform good or evil actions will not exist in a future world.

Therefore, public companies must be rewarded or punished in the present world.

"The only way of resisting this argument is either to maintain that public companies are not moral agents, and therefore not responsible for their good or evil actions, or that they will exist in a future world. The former part of the alternative we think we have sufficiently refuted—the latter is too wild to need refutation."—*Gilbart's Practical Treatise on Banking.*

The Universal Adaptation of Christianity.

"Our first inquiry must be, whether Christianity is adapted to the circumstances of other countries?

"Great praise has been bestowed on the founders of different religions for adapting their systems to the circumstances and condition of the people among whom they were established. Most of these characters united in their own person the offices of prophet and of legislator. They possessed both the civil and the ecclesiastical authority, and hence they employed the sanctions of religion to enforce those political maxims which they deemed calculated to promote the national happiness of the people whom they governed. But this circumstance, while it recommended the religion to the people among whom it was first promulgated, rendered that religion unfit for other nations placed in different circumstances, and even for the same people in succeeding times. Did Christianity possess any of these local peculiarities, it would not be adapted to be the religion of the world. The opponents of missions might then boldly contend, that as Christianity, however beneficial to ourselves, was not adapted to the condition of other countries, its Divine Author could never have designed its universal promulgation. Did Christianity require, that three times in a year all the males should make a pilgrimage to some holy city, it would obviously not be adapted to become a universal religion—did it include, that the frequenting of some holy land, or of some sacred river, was essential to salvation, it would not be adapted for those countries which lay at a distance from the consecrated spot—did it enjoin the numerous ablutions practised

among the orientals, it would not be adapted for colder climates —did it require a cessation from labour for one or two years, it would not be adapted for barren agricultural countries—did it enjoin that, during a considerable part of each year, its disciples should eat only a particular kind of food, it would not be adapted for those countries in which that food could not be obtained—did it demand a community of goods, or prohibit the taking of interest for money, it would not be adapted for commercial countries—did it forbid the practice of defensive war, it would not be adapted for those nations who are surrounded by powerful and turbulent neighbours—did it prohibit the sailing on a river, it would not be adapted for maritime provinces; and, in fine, did it establish numerous holidays, and costly ceremonies, or did it require its votaries to retire from the world and spend their time in solitary meditation, it would tend to impoverish every country in which it might be introduced. These dogmas have been incorporated in other religious systems, but they are not countenanced by Christianity—the *doctrines* of Christianity perfectly harmonize with the reason and condition of man in every part of the world —the *precepts* of Christianity have a reference to the performance of those personal, domestic, and public duties, which are connected with the social relations which everywhere subsist between man and man—the *ceremonies* of Christianity are few and simple; their observance is equally within the power of the indigent and the wealthy, the untutored and the learned — the *motives* supplied by Christianity are those which can be felt and appreciated by every class and generation of men. Christianity has no favoured nation whom she wishes to exalt— she has no sovereign pontiff whose influence she wishes to extend —she has no consecrated spots where alone her blessings can be obtained—she has no privileged class whom she has made the depositaries of her will—she knows nothing of the distinctions of climate and of colour—her appeals are made at once to the unsophisticated principles of human nature. Wherever she finds a man, whoever he be, she cries—Examine my claims—think—be happy—and be free."—*The Author.*

The following extract will teach us an important lesson in practical logic. The lesson is, not to dispute with parties who know nothing of the subject. The arguments in favour of many doctrines cannot be duly appreciated by those who are unacquainted with the elementary principles of the sciences to which those questions belong. We ought, in such cases, to be ready to give instruction, if the parties are willing to receive it; but to decline any challenge to dispute. We are forbidden to cast pearls before

swine. A soldier is trained to arms, not to enable him to quarrel with every one who may jostle him in the street, but to enable him to fight well on the field of battle.

Experience the Test of Truth.

"'Philip findeth Nathanael, and saith unto him, We have found him, of whom Moses in the law, and the prophets did write, Jesus of Nazareth, the son of Joseph. And Nathanael said unto him, Can there any good thing come out of Nazareth? Philip saith unto him, Come and see.'—*John* i. 45, 46.

"But now let us turn to the remaining topic presented by our text—the treatment which a prejudiced man should receive from a believer. It is very observable, that Philip declined all controversy with Nathanael, though a fairer opening could hardly have been offered. Nathanael's question might almost be said to have challenged controversy, or, if not controversy, some measure of expostulation. But Philip attempted no correction of the mistake into which Nathanael had fallen; he undertook no argument to prove to him the unreasonableness of his question. His only anxiety was to bring Nathanael into personal communication with Jesus; this was the method which had succeeded with himself, and he felt as though it could not possibly fail with another. And there was great wisdom in this: for it does not often happen that men are convinced by an argument. There is something in the intellectual warfare, whatever the subject which comes under discussion, which seems generally to strengthen the combatants in their respective opinions. It may, therefore, be better in many cases, to try the 'Come and see' which Philip tried, and with which he succeeded. I will not endeavour by abstract arguments to convince Nathanael that 'good' can 'come out of Nazareth,' when I have that good to show him if he will only accompany me and look. If, for example, I can persuade a man to read the Bible, it may be immeasurably better than if I draw him into debate on the evidences of the Bible. He says to me, 'Can there any good thing come out of Nazareth?' This Bible of yours is confessedly the work of illiterate men: would you persuade me that I may be instructed from its pages?' And such a question tempts us to go straightway into controversy, to the varied and multiplied proofs of inspiration from the heaven above and from the earth beneath, from the past, the present, and the future. All crave to be urged—and occasions will arise in which it is indispensable to urge them; but, they are, perhaps, less numerous than those in which it were wiser to waive them, and bend all the effort to the persuading a man to 'come and see' for himself. We like leaving the Bible to defend its own character, and make good its own pretensions. We have every confidence

in the self-evidencing power of Scripture, in the power which there is in the contents of the Bible of acting as the credentials of the Bible. We have every faith in the fine saying, that there is no evidence of the truth of Christianity like that which a man knocks out for himself with the simple apparatus of a Bible and a conscience. The thorough suitableness of the gospel—its exact adaptation to our wants and our circumstances—in this lies a mighty argument that the gospel is from God. You admit the argument in regard to creation; you admit that the precise adaptation of the world in which we dwell to the beings who inhabit it, is a vast proof that a supreme Intelligence prepared the dwelling-place for the creatures, and the creatures for the dwelling-place. You think that the existence of such a series of adjustments and contrivances seems to prove the one made on purpose for the other, and shows such evidence of design as should leave no doubt on the authorship of creation. Now we claim the very same admission in reference to redemption. If the exact adaptation of the world to our natural circumstances be received in evidence that God made the world, the just as exact adaptation of the gospel to our spiritual circumstances should be received in evidence that God planned the gospel. Ay, and as even a poor man, who has never been schooled in the lessons of natural theology, might feel the smile of a Deity in the sunshine which gladdened him, and hear the voice of a Deity in the melodies which soothed him, and trace the hand of a Deity in the supplies which sustained him, so might he convince himself of the divinity of doctrines which dispersed all his anxieties, met all his wishes, and satisfied all his wants, though he never heard of the demonstrations of the schools, and was never trained to the defence of Christianity. And, therefore, 'Come and see' may be the best thing to say to the modern Nathanael, who is inclined towards Deism; towards the rejection, that is, of the Scriptures as a revelation from God. We ask him to read the Bible; for, unfair as it is, the Bible may be rejected where it has never been read; and many a sceptic, and many a young man who thinks it shows independence of mind to boast his infidelity, if he be only close pressed, will be hardly able to tell you what those things are which he affects to disbelieve. Let there be only an endeavour to lay aside prejudice, and to read Scripture with the same candour as is given to an ordinary book, and we can almost dare to answer that men will rise from the perusal disposed to confess that it is indeed the Word of God; at least we can believe, that if no effect were wrought through Philip's method, 'Come and see,' neither would there have been through the more combative method, 'Come and debate.'"—*Sermon preached at St. Margaret's Church, Lothbury, by the* Rev. Henry Melvill, B.D.

PART V.

THE APPLICATIONS OF REASONING.

We have now nearly completed our book. We have gone through the introduction to reasoning, the principles of reasoning, and the forms of reasoning. We have only to consider the applications of reasoning. Many of these applications you will have already noticed in the observations and quotations I have brought before you. But as this matter is of great importance, we must consider it by itself. For the practical application of our reasonings is, after all, the great end of our acquiring a knowledge of the art of reasoning.

SECTION I.

THE APPLICATION OF THE ART OF REASONING TO THE ORDINARY AFFAIRS OF LIFE.

In the application of logic to the ordinary affairs of life, we have first to discover general principles, and then to apply these general principles to particular circumstances. We shall endeavour to do this more in the way of suggestion than of instruction. In the affairs of life you will have to rely mainly on your own judgment. And what are you reading logic for, but to enable you to form sound opinions for yourself? The following are probably some of the points that will require your consideration.

1. The Logic of Dress :—

"The numerous advantages, with the importance resulting from an elegant personal appearance, are too generally known and appreciated throughout civilized Europe, to require much comment here. It is only to be lamented, that the enormous charges usually incident to a desirable appearance, preclude many of limited incomes from enjoying it, while it brings down distress upon others. For I think it will almost invariably be found, that the first embarrassment young men—more especially our city youth with small salaries—bring upon themselves, is through endeavouring to support a fashionable exterior in the usually expensive method; hence in time results inability to pay, with the certain after consequences of arrest, and, with sorrow I pen it, too frequently entire ruin."—*The Whole Art of Dress.*

The book from which I have taken the above extract, has separate chapters upon coats, waistcoats, and pantaloons, stocks and neckcloths, shirts, pocket-handkerchiefs, stockings, socks and gloves, hats and caps, boots and shoes, and the adaptation of dress to tall and short men, and to fair and dark complexions. He shows that on all these points much logic may be expended both in regard to taste and economy.

"Fair and Dark Complexions. — The appearance of the countenance is very greatly subjected to be relieved or depressed by the influence of colours. To be aware immediately of this fact, you have only to perceive how wretched white neckcloths make some people appear; those, for instance, of a sallow skin; while, on the opposite, a black velvet or satin stock throws, by its comparative depth of hue, the former into shade. All this is either more or less regulated by other colours. On dark people a dark coat looks best; black for the neck most assuredly; then, as too much black would look gloomy, they should be relieved by a white or buff waistcoat."—*The Whole Art of Dress.*

In Mr. Hall's "Book of the Feet," we have an example of the truths of science being applied to the promotion of personal comfort. The anatomy of the foot proves the injury of tight shoes :—

"'There is nothing more beautiful than the structure of the human foot,' says Sir Charles Bell, 'nor perhaps any demonstration which would lead a well-educated person to desire to know more of anatomy than that of the foot. The foot has in its structure all the fine appliances you see in a building. In the

first place, there is an arch in whatever way you regard the foot; looking down upon it we perceive several bones coming round the astralogos, and forming an entire circle of surfaces in the contact. If we look at the profile of the foot, an arch is still manifest, of which the posterior part is formed by the heel, and the anterior by the ball of the great toe, and in the front we find in that direction a transverse arch: so that, instead of standing, as might be imagined, on a solid bone, we stand upon an arch composed of a series of bones, which are united by the most curious provision for the elasticity of the foot: hence, if we jump from a height directly upon the heel, a severe shock is felt; not so if we alight upon the ball of the great toe, for there an elasticity is formed in the whole foot, and the weight of the body is thrown upon this arch, and the shock avoided.'"—*Hall's Book of the Feet.*

"For upwards of twenty years as a bootmaker, I have made the feet my study, and during that period many thousand pairs of feet have received my attention. I have observed with minute care the *cast* from the antique as well as 'the modern instances,' and I am obliged to admit, that much of the pain I have witnessed, much of the distortion of the toes, the corns on the top of the feet, the bunion on the side, the callosities beneath, and the growing in of the nails between, are attributable to the shoemaker. The feet, with proper treatment, might be as free from disease and pain as the hands; their structure and adaptation to the wants and comfort of man, as we have seen, is most perfect."—*Ibid.*

2. The Logic of Marriage. To wed, or not to wed? that is the question:—

"Man is airthenware, coarse, rude, rough, and onseemly. Woman is porcelain, a crittur highly finished and delicate. Man was made for knockin' about, he is tough and strong; but woman, to be taken care of and handled gently. What a sweet thing is innocence, Sam; how beautiful to contemplate, how lovely to associate with! As a philosopher, I admire purity in the abstract; but, as a man and a Christian, I love it when parsonified. Purity in a child, of such is heaven; purity in woman, of such also is the realms of bliss; but purity in man—oh, Sam, I am most afeerd, sometimes, there ain't much of it any where now a days, I snore: but matrimony, Sam, is a state ordained by God, not only to carry out his great purposes that is above our comprehension, but also for our happiness; yes, it is a natural state, and a considerable of a pleasant one too, when well considered and rightly entered upon. Don't put it off too long, Sam; don't wait till the heart ossifies."

"Yes, my son, said he, get married, and marry soon; it 's time you were a-thinkin' on it now in airnest.—Well, I feel most plaguily skeered, minister, says I, to try, for if once you get into the wrong box, and the door is locked on you, there is no escape as I see; and besides, women are so everlastin' full of tricks, and so cunnin' in hiden 'em aforehand, that it 's no easy matter to tell whether the bait has a hook in it or not; and if you go a-playin' round it and a-nibblin' at it, why a sudden jerk given by a skilful hand may whip it into your gills afore you know where you be, and your flint is fixed as shure as there are snakes in Varginy."

"I must go now; but I'll give you a word of advice at partin', my dear boy. Don't marry too poor a gall, for they are apt to think there is no eend to their husband's puss; nor too rich a gall, for they are apt to remind you of it onpleasant sometimes; nor too giddy a gall, for they neglect their families; nor too demure a one, for they are most apt to give you the dodge, race off, and leave you; nor one of a different sect, for it breeds discord; nor a weak-minded one, for children take all their talents from their mothers; nor a——O Lord! says I, minister, how you skeer a body! Where onder the sun will you find a nonsuch like what you describe? There ain't actilly no such critturs among women.—I'll tell you, my son, said he, for I'd like afore I die to see you well mated; I would, indeed! I'll tell you, tho' you talk to me sometimes as if I didn't know nothin' of women. You think nobody can't know 'em but them as romp all their days with them as you do; but them, let me tell you, know the least, for they are only acquainted with the least deserving. I'll gin you a gage to know 'em by that is almost invariable, universal, infallible. The character and conduct of the mother is a sure and certain guarantee for that of the darter."—*Sam Slick.*

3. The Logic of Age. Ought the husband to be older than the wife?:—

"We say *disproportion of age*, for allowing their years to be equal, as they usually are, the lady is virtually many years in advance. A woman, all the world over, is as old at twenty as a man is at twenty-eight; that is to say, she has as much world-knowledge, as much tact, as much finesse, as much judgment of character, as much self-possession, as much—cunning we were going to say, but that is rather a harsh term to apply to a lady.

"Now this disproportion of ages gives rise to many serious evils; so many, that we hardly know which to begin with. The young women must despise or at least undervalue the young men with whom they associate, as inferior to themselves in manner,

tact, and conversational power. Hence they form a low opinion of men, as men, and are tempted to value them only for their external advantage,—personal beauty, skill in dancing—above all, wealth. Here is a fearful incentive to mercenary marriages. But we prefer to confine ourselves to its effects on married life. The bride and bridegroom are the same age, say twenty-three or four, unless indeed she happens to be a year older than he. In a mere external and physical point of view the first consequence is that she is an old woman while he is in the prime of life, for though *both* sexes among us are too apt to break themselves down, and grow old before their time, this premature decay is more general and more speedy with our females. The inconveniences, mistakes, mortifications, and jealousies that constantly arise from such discrepancy, are too evident to require more than being hinted at. But this is nothing to the moral phase of the question,—the effect which a virtual disparity of ages has had in establishing a *gynocracy*. That a *gynocracy* does exist, no one conversant with fashionable life will be hardy enough to deny. In nine cases out of ten the lady rules the roast. That cardinal duty of a wife, *respect for her husband*, is utterly ignored by her. He is regarded as little more than an upper servant. Now the main cause of this is undoubtedly the original equality (which is virtual disproportion) of ages. As the bride, we repeat it, is substantially ten years older in all world-knowledge than the bridegroom, she soon gets the upper hand of him. If he is a man of some character, the fight may last two or three years; occasionally he is driven by his domestic troubles into evil courses, in which cases he usually goes to work with the national rapidity and earnestness, so as to kill himself off in twelve months, and leave his widow more triumphant than disconsolate."—*New York Literary World.*

4. The Logic of Diet:—

"*You hate cold mutton!* The more shame for you, Mr. Caudle. I'm sure you've the stomach of a lord, you have. No, sir; I didn't choose to hash the mutton. It 's very easy for you to say, hash it; but *I* know what a joint loses in hashing: it 's a day's dinner the less, if it 's a bit. Yes, I dare say; other people may have puddings with cold mutton. No doubt of it; and other people become bankrupts. But if ever you get into the Gazette, it shan't be *my* fault.

"Where do you think pudding 's to come from every day? You show a nice example to your children, you do; complaining, and turning your nose up at a sweet piece of cold mutton, because there 's no pudding! You go a nice way to make 'em extravagant—teach 'em nice lessons to begin the world with. Do you

know what puddings cost; or do you think they fly in at the window?

"*Apples arn't so dear, arn't they?* I know what apples are, Mr. Caudle, without your telling me. But I suppose you want something more than apples for dumplings? I suppose sugar costs something, doesn't it? And that 's how it is. That 's how one expense brings on another, and that 's how people go to ruin." *Mrs. Caudle's Curtain Lectures.*

"To be easy all night,
Let your supper be light;
Or else you 'll complain
Of a stomach in pain."

5. Logic to Children:—

"When the parent is sufficiently enlightened to rear his child himself, instead of plying him with rudimental books, dictionaries, and restraint, let him impart the first instructions by familiar conversation. Ideas advanced in this way are accommodated to the comprehension of the pupil, by mutual good feeling rendered attractive, and brought directly within the embrace of his mind. This instruction leads him to observe, and accustoms him to compare, reflect, and discriminate, offers the sciences under interesting associations, and inspires a natural thirst for instruction. Of all results which education can produce, this is the most useful. A youth of fifteen, trained in this way, will come into possession of more truths, mixed with fewer errors, than much older persons reared in the common way. He will be distinguished by the early maturity of his reason, and by his eagerness to cultivate the sciences, which, instead of producing fatigue or disgust, will every day give birth to new ideas and new pleasures. I am nevertheless little surprised, that the scrupulous advocates of the existing routine should insist that such a method tends to form superficial thinkers. I can only say to these profound panegyrists of the present order of instruction, that the method which I recommend was that of the Greeks. Their philosophers taught while walking in the shade of the portico, or of trees, and were ignorant of the art of rendering study tiresome, and not disposed to throw over it the benefits of constraint. Modern instructors ought, therefore, to find that they were shallow reasoners, and that their poets and artists could have produced only crude and unfinished efforts."—*Art of Being Happy.*

6. Logic to Servants:—

"I feel almost ashamed to urge upon the master and mistress the propriety of using kind language to their domestics, so much

a matter of course it ought to be that in addressing those who are rendering a service to us, we should be kind. Yet to scold servants is the usual process by which an attempt is made to make them better. Nay, sometimes although the servant is not to blame for the mistake which excites the master's displeasure, he is nevertheless scolded, and is made the object upon whom the ill-temper of the master vents itself, as if to bear that were part of the consideration for which he receives wages. The effect is, to wound unnecessarily the feelings of a sensitive man, and to still further brutalize one who is indifferent."

"It is so easy to add 'if you please' to a request; to speak in a gentle tone of voice; to be thankful when what you have asked for has been done: moreover, the service is then performed with so much alacrity and cheerfulness. Unkind language expressed in a harsh voice is listened to certainly, and obeyed; but it is obeyed through fear, or some other equally low motive, and if a stronger motive comes there will be no obedience. *A reason also might generally accompany the request.* When it does, the necessity for its performance is more strongly impressed upon the servant; his employment is no longer so purely mechanical, and he increases therefore in intelligence."—*On the Responsibilities of Employers.*

7. The Logic of Domestic Consultation:—

"But all I want to ask you is this: do you intend to go to the sea-side this summer? *Yes? you'll go to Gravesend?* Then you 'll go alone, that 's all I know. Gravesend! You might as well empty a salt-cellar in the New River, and call that the sea-side. What? *It 's handy for business?* There you are again! I can never speak of taking a little enjoyment, but you fling business in my teeth. I 'm sure you never let business stand in the way of your own pleasure, Mr. Caudle—not you. It would be all the better for your family if you did."

"What do you say? *How much will it cost?* There you are, Mr. Caudle, with your meanness again. When you want to go yourself to Blackwall or to Greenwich, you never ask, How much will it cost? What? *You never go to Blackwall?* Ha! I don't know that; and if you don't, that 's nothing at all to do with it. Yes, you can give a guinea a plate for whitebait for yourself. No, sir; I 'm not a foolish woman; and I know very well what I'm talking about—nobody better. A guinea for whitebait for yourself, when you grudge a pint of shrimps for your poor family. Eh? *You don't grudge 'em anything?* Yes, it 's very well for you to lie there and say so. *What will it cost?* It 's no matter what it will cost, for we won't go at all now. No; we 'll stay at home. We shall all be ill in the winter—every one of us, all

but you; and nothing ever makes you ill. I've no doubt we shall all be laid up, and there'll be a doctor's bill as long as a railroad; but never mind that. It's better—much better—to pay for nasty physic than for fresh air and wholesome salt water."

"*What will I do at Margate?* Why, isn't there bathing, and picking up shells; and arn't there the packets, with the donkeys; and the last new novel—whatever it is, to read—for the only place where I really relish a book, is at the sea-side. No, it isn't that I like salt with my reading, Mr. Caudle! I suppose you call that a joke? You might keep your jokes for the day-time, I think. But as I was saying—only you always will interrupt me—the ocean always seems to me to open the mind. I see nothing to laugh at; but you always laugh when I say anything. Sometimes at the sea-side—especially when the tide's down—I feel so happy; quite as if I could cry.

"When shall I get the things ready? For next Sunday? *What will it cost?* Oh, there—don't talk of it. No: we won't go. I shall send for the painters to-morrow. What? *I can go and take the children, and you'll stay?* No, sir; you go with me, or I don't stir. I'm not going to be turned loose like a hen with her chickens, and nobody to protect me. So we'll go on Monday? Eh?"—*Mrs. Caudle's Curtain Lectures.*

8. The Logic of Social Intercourse:—

"What is it, then, that constitutes a gentleman in your mind? Not his station—for he may disgrace it. Not his power—for he may misuse it. Not his graces and endowments,—for you may despise them. It is, in the nakedness of *truth*, because he possesses qualities which ennoble him, and shed a lustre over his actions, in their utter separation from those of the common herd by whom he is surrounded. Because you see in that man a depth of feeling and right principle, which you look in vain for in the ordinary run of the men you meet."

"When, then, you hear any one giving himself airs, and despising his part in the world, you will say immediately, that he cannot have the true feeling of a gentleman; because, instead of looking into his own mind as the seat and source of honour, he descends to the external trappings and decorations of his office; and only regards himself with complacency, as he glitters in the eyes of others."

"Again, should you unfortunately find yourself embroiled in any dispute or quarrel—which may occur to the most peaceable—and perceive, on reflection, that you have been betrayed by the heat of the moment into any intemperance, or that there is any one point in which you are not completely satisfied with yourself,

—do not fancy it derogatory to your *manhood* to acknowledge your error, and to make a just reparation. You may, at first, have an idea, that it is inconsistent with true courage to make this concession, and that you should bear the brunt of the offence with a total disregard of personal consequences. But as you mix more with the world, you will find, that in very many cases a much higher degree of courage is necessary to the avowal of a fault, than to sustaining it. . . . . We should wish you to be firm as a rock in repelling an aggression or an insult;—but still we would strongly impress upon you, that it is, in every case, far more consistent with high courage and gentlemanly feelings to own a wrong than to defend it; and to allay, than to confirm an injury."

"When therefore you enter into society, whatever may be the state of your *mind*, put such a restraint on the expression of it, that you shall appear pleased and cheerful. Consider, that people meet together for instruction and enjoyment, and to rub out the cares and cobwebs of the day. You wish to join them to promote these good objects; and if you are so dispirited and careworn, that you cannot promote them, a just and correct tone of feeling would induce you to remain at home."

"There are two or three minor subjects that occur to me, which may be dismissed at once in a few words. On no account swear, or use cant terms. Never be inquisitive. Never interrupt a speaker. Always take off your hat to a woman. Scrupulously acknowledge the salute of a poor man. Eat slowly and quietly, and without any show of eagerness. This last is a serious solecism in good-breeding. Indeed, it is impossible for you to be too careful in your own person of the niceties of the table, and too vigilant of offending against its recognised proprieties. I will not attempt to give any description of them; as it would lead me into a long detail of things which might seem trifling, and occasionally, perhaps, ridiculous; but you may receive it as an undoubted truth, that they bear great weight with them in the world; and that a disgust against a man is seldom more readily taken, than in a dereliction of these little points, either through ignorance or wilful rudeness."—*The English Gentleman.*

There are many other topics on which you will have to exercise your reasoning powers. Among others, let me request you not to forget to inquire into the reasons for insuring one's life, and the reasons for making a will. You should also exercise your reasoning powers in the choice of your amusements. As, however, on this subject you will also consult your inclination, I will conclude merely with a quotation on the game of chess:—

"There are two important lessons to be learned at chess..

"The first is *the value of acquired knowledge.* A person who has studied the game of chess and knows it, will beat with ease and certainty one of much more talent for the game, who understands its general principles only.

"The second is, encouragement *never to give up a losing game,* but still to struggle on for success, playing only with increased caution and thought, as the difficulties muster around you. In life, as at chess, no one can anticipate the remote consequences of every position, and the skilful management of disastrous circumstances may be the road to prosperity."—*Mayo's Philosophy of Living.*

SECTION II.

THE APPLICATION OF THE ART OF REASONING TO HISTORY.

SOME years ago I commenced a work on the Philosophy of History. It was proposed to be written in the form of Lectures. After writing two Lectures, I was compelled, from want of leisure, to lay the subject aside, and it will probably never be resumed. The commencement of the work may now for the first time be useful by standing at the head of this Section:—

"Philosophy has been defined, 'the knowledge of the reasons of things;' in opposition to History, which is the bare knowledge of facts; or to Mathematics, which is the knowledge of the quantity of things, or their measures. It is the province of philosophy to collect together those facts which have occurred; to investigate their causes and operations; and to classify them according to the principles they may have developed. It is thus that the chemist takes every object in nature, examines its constituent principles, notices their operation when brought into combination with other bodies, and from the effects he observes he forms those general rules, which are universally true, and which, when arranged and demonstrated, form what may be called the Philosophy of the Science.

"Thus it is in every branch of experimental philosophy. At first the substances of water or air, or other natural objects, are merely observed. By and by a few experiments are made upon

them. Other experiments follow, and either correct or confirm those which preceded. Experiments are multiplied, until it is found at last that in a variety of instances the same experiments are uniformly followed by the same results. These are then considered as established truths; the knowledge thus acquired is acted upon in the investigation of other bodies; fresh truths are elicited; and the whole body of truths or general principles thus established by repeated experiments, constitute what is termed Natural and Experimental Philosophy.

"But this course of procedure is not confined to material substances. The moralist observes minutely what actions conduce to happiness and what lead to misery. Those actions which lead to happiness, he calls good or virtuous; those actions which lead to misery, he calls bad or vicious. He examines the causes or motives from whence those actions proceed, and he considers the motives to be good or evil according to the good or bad actions they produce. Hence he forms general rules by which he declares that certain classes of actions or motives are good, and ought to be inculcated, while other classes of actions or motives are evil, and ought to be condemned. He compares these rules with the relations which man sustains in reference to other beings in the universe. Hence, to examine the reasonableness and propriety of moral conduct, and to investigate and lay down rules for moral action, constitute what is termed the Science of Moral Philosophy.

"Thus, too, the political economist views the increase and the diminution of those products which constitute national wealth. He traces the various circumstances by which either the one or the other may be promoted; and from the observation of individual examples and instances, he lays down general principles for the regulation of future conduct in affairs of state economy. This constitutes the philosophy of the science.

"Political economy bears the same relation to history as morals do to biography. History records those facts which have occurred in the affairs of nations. From these facts political economy derives her principles. She arranges these facts, not according to their chronological order, but accordingly as they concurred in exhibiting the good or evil of any line of political conduct. So biography records those events that have occurred in the lives of individuals; and the moralist hence derives principles for the regulation of individual conduct.

"All philosophy, whether it refer to material or immaterial subjects, is founded on fact. It is not philosophy to build castles in the air; to fancy theories, and then maintain them in defiance of evidence. If we wish to lay any claim to the character of philosophers, we must not first assume principles, and then hunt for facts in order to establish them; but our principles must be

deductions from the facts with which we were previously acquainted.

"When, however, the facts by which our principles are supported are so numerous or so decisive, that few persons are disposed to dispute the conclusion to which they lead, it is not always necessary, in teaching our general principles, to detail all the individual facts upon which they may be founded. A few pertinent examples are sufficient for the purpose.

"From what I have said, none of my auditors will be at a loss to conjecture what ideas I attach to the Philosophy of History. The Philosophy of History means those general principles which the facts of history clearly establish. It is not, therefore, my intention to detail all the events which are recorded in the page of history. I shall attempt to exhibit those principles which are deduced from those events, and shall consider those events themselves, not in their chronological order, but as they tend to establish the principles I had previously advanced.

"The philosophy of history takes a much wider range than political economy. The economist views only those facts which have an influence on the accumulation of national wealth. The philosopher views also those facts which have a reference to the character of man; to the development of his physical powers; the exercise of his intellectual faculties; his progress in scientific inquiry; the formation of domestic and civil society; and his performance of moral and religious duties.

"In pursuing these inquiries, I propose to deliver five lectures. The first will be on the Philosophy of Geographical History; the second, the Philosophy of Domestic History; the third, the Philosophy of Intellectual History; the fourth, the Philosophy of Political History; fifthly, the Philosophy of Ecclesiastical History.

"In the first lecture, upon the Philosophy of Geographical History, I propose to inquire what are the effects which history records to have been produced upon man and upon human society by geographical circumstances—by the varieties of climate; by the mountainous character of countries; by the fertility or barrenness of the soil; or by the intervention of rivers or arms of the sea.

"In the second lecture, I shall inquire what is the language of history as to the relation of husband and wife; the institutions of polygamy and divorce; the relation between parents and children, masters and servants; and the rise and progress of domestic slavery. This lecture will be on the Philosophy of Domestic History.

"In the third lecture, on the Philosophy of Intellectual or Scientific History, I shall inquire into the circumstances which have developed the intellectual faculties; the rise and progress

of the arts; the circumstances by which they are promoted or retarded; the advantages which the moderns have over the ancients; and the benefits to be expected from universal education.

"In the fourth lecture, upon the Philosophy of Political History, I shall inquire what is the evidence of history as to the origin of government; the advantages and disadvantages of particular forms of government; and the union of the simple forms in the British Constitution.

"In the fifth lecture, upon the Philosophy of Ecclesiastical History, I propose to examine whether it is obvious from history that man is endowed with a moral sense; to inquire what are the different forms of polytheism; and how far it is necessary that the church should be established by the civil power; and to trace the influence of religion upon the political, intellectual, and social happiness of man."

We shall now point out some of the different ways in which logic is applied to history.

1. Logic is applied to history in examining the evidence in favour of or against the truth of disputed facts:—

"Without this exercise of the reasoning faculties, books will as often mislead as instruct us. In making an estimate of the authenticity of historical relations, three principal rules are to be observed,—the probability or improbability of the facts recorded, the nature of the evidence attesting them, and in what degree they are corroborated or contradicted by the general circumstances of the world in the period of time alluded to. On these principles the reader must exercise a discretionary power of yielding or suspending his belief; but he ought carefully to avoid the two extremes of scepticism and credulity, which are equally inimical to the improvement of the human mind."—*Bigland's Letters on History.*

"There is a *minuteness* in the details of the Mosaic writings, which argues their truth; for it often argues the eye-witness, as in the adventures of the wilderness; and often seems intended to supply directions to the artificer, as in the construction of the tabernacle.

"There are *touches of nature* in the narrative, which argue its truth; for it is not easy to regard them otherwise than as strokes from the life—as where the '*mixed* multitude,' whether half-casts or Egyptians, are the first to sigh for the cucumbers and melons of Egypt, and to spread discontent through the camp; as, the miserable exculpation of himself, which Aaron attempts, with all

the cowardice of conscious guilt—'I cast into the fire, and *there came out* this calf:' the fire, to be sure, being in the fault."

"There is a *candour* in the treatment of his subject by Moses, which argues his truth; as when he tells of his own want of eloquence, which unfitted him for a leader—his own want of faith, which prevented him from entering the promised land—the idolatry of Aaron his brother—the profaneness of Nadab and Abihu, his nephews—the disaffection and punishment of Miriam, his sister—the relationship which Amram his father bore to Jochebed his mother, which became afterwards one of the prohibited degrees in the marriage tables of the Levitical law."—*Blunt's Scriptural Coincidences.*

2. Logic is applied to history in discussing the characters of distinguished men:—

"If Alexander had not been at the head of such an army, and assisted by the counsels and exertions of such commanders as Parmenio, Lysimachus, Antigonus, Perdiccas, Craterus, Ptolemy, and others; or if he had turned his arms westward against the warlike Romans, instead of the effeminate Persians, his affairs would, in all probability, have assumed a very different aspect, and he would scarcely have shone in the page of history as the invincible conqueror. But every observing and intelligent reader of history cannot but see, that in this war the circumstances of the two belligerent nations, and the state of their armies, were such that a general of ordinary abilities in Alexander's place could hardly have failed of success. Possessing all the advantages of an excellent literary and military education, and endowed by nature with courage, magnanimity, and genius, Alexander appears to have been capable of the greatest things; but we can only estimate his political and military character by what he actually performed; and in this estimation we must allow, that every circumstance duly considered, Alexander's achievements were a much less arduous task than those of many other warriors, whose successes have been far less brilliant, and whose names shine with a much less dazzling lustre.

"It must, however, be confessed, that some of Alexander's projects are characteristic of a political and commercial, as well as a warlike genius, and redound more to his honour than his mad career of conquest. *His foundation of the city of Alexandria in a situation* so extremely favourable to commerce, seems to indicate an extensive view of the advantages accruing from trade; and the flourishing state of that city, both while it continued the capital of an independent kingdom, and afterwards under the Roman and Byzantine empires, displays the justness of his understanding in the choice of so excellent a situation for a

great mercantile city. His sending out his admiral Nearchus, to explore the coasts of Persia and India, also shows that he was actuated by a spirit of discovery, as well as an avidity of conquest; and if he had attained to an advanced age, it is not possible to conceive what he might have performed, when, the best parts of the world being subdued, conquest could no longer have presented to him the same allurements."—*Bigland's Letters on History.*

3. Logic is applied to history in drawing parallels or contrasts between persons or epochs or events:—

"England under Cromwell was in a high state of general prosperity. Its domestic commerce prospered. Cromwell was the chief founder of our maritime greatness. The seas were swept of all obstruction, to an unprecedented freedom of trade. The merchants who had ordered the most costly goods from abroad, could rest in quiet and contentment until the appointed time for their expected arrival; or, having shipped some of their most costly produce for distant lands, they could indulge in a well-grounded confidence that, at the appointed time, the needful equivalent would arrive. This wonderful confidence derived its chief strength from the fact, that the great name of Cromwell was a mighty safeguard to property both at home and abroad; a very terror to all evil-doers as well on sea as on the land. Learning prospered. In illustration of this it will be enough to contemplate the state of Oxford under the vice-chancellorship of Dr. Owen. There was liberty at home and abroad. Of the principles of equity and toleration which the Protector had established in England, he became the great champion and defender in foreign lands.

"I certainly could not divine what Oliver Cromwell would do, were he now at the head of the Government of these kingdoms; but it were easy to know what he would not do. He would not have submitted your institutions to Rome, for the consideration, revision, and approval of an Italian priest. He would not compel the people of Great Britain, out of their hard earnings, to pay thirty thousand pounds a-year for the support of Maynooth. He would not have meddled with the foundation of those new empires now rising up in our colonial dominions, by supporting, at the cost of England, Romish priests and bishops, and by erecting from the same source Popish chapels and schools. He would not have allowed of any unconstitutional Papal aggression. He would not allow British subjects to suffer persecution, or lie unbefriended in remote Inquisitions on account of their religion. He would not be at a loss to know was the Papal system a religious system or a secular system, half religious or half secular.

He would not have been at a loss to know how to deal with Cardinal Wiseman. Such is what Oliver Cromwell would not have done in England of the seventeenth century; and such, in some respects, is what he would have done. Say, do we or do we not want a man of similar policy, and of a kindred fortitude for England of the nineteenth century? Do we, or do we not? is the question. Let the remarkable times, now passing over us, declare."—*Rev. Joseph Denham Smith's Lecture on Oliver Cromwell; or England in the Past, viewed in relation to England in the Present.*

4. Logic is applied to history in considering the wisdom or justice of individual acts:—

"Although historians may conjecture that the removal of the imperial residence contributed to hasten the downfal of the empire, it is a certain fact, that the fixing of it at Constantinople put a *final period to the passage of the barbarians through the Bosphorus, who could never after force that insurmountable barrier;* and Greece, as well as Asia Minor, was secure from their ravages, until Valens unadvisedly suffered the Goths to pass the Danube, and received their armed bands into the heart of the empire. In after ages Constantinople presented an *insurmountable obstacle to the progress of the Persians under Chosroes,* and resisted all the attacks of the Avans, the Goths, and other northern enemies. *During the existence of the Caliphate, that city was the bulwark of Europe against the Saracens*; and fell a prey to the Turks so late as A. D. 1453, *one thousand and forty-three years after Rome was taken and plundered by Alaric,* and nine hundred and seventy-seven years after the entire subversion of the western empire. Indeed, no good reason can be given why *the empire might not have been as well defended,* when Constantinople was the capital, as if Rome had always retained that prerogative; and it is no improbable conjecture, that if the imperial residence had not been *removed to Constantinople, all the eastern parts of the empire would have fallen a prey to the Persians, on the one hand, and to the Goths on the other,* without prolonging for any considerable time the existence of the western empire."—*Bigland's Letters on History.*

5. Logic is applied to history in tracing the adaptation or effects of particular laws or institutions:—

"The Hebrew laws concerning debt, were remarkably different, in many respects, from those which prevail in European countries. This difference probably arose in a great degree from the peculiarities in the condition of the people; but, however this be, their

singularity, their high antiquity, and the sanction under which they come to us, recommend them to greater attention than they seem generally to have received. It will be recollected, that it was provided that, as soon as Palestine was conquered, there should not be one individual without property. Every one had his hereditary land, which he might alienate until the fiftieth year, but not for ever. Poverty, therefore, could rarely prevent the ultimate safety of what was advanced in loan: and of an insolvent debtor, destitute of property on which execution could be made, the Hebrew could scarcely have an idea. The following useful summary of these laws is from T. H. Horne, who seems to have condensed it from Michaelis. It will serve as an index to the various details which we shall consider separately, as they hereafter come under our notice. 'The debt which remained unpaid until the seventh or sabbatic year (during which the soil remained without cultivation, and, consequently, a person was supposed not to be in a condition to make payments) could not be exacted during that period (Deut. xv. 1—11). But, at other times, in case the debt was not paid, the creditor might seize, first, the *hereditary land* of the debtor, and enjoy its produce till the debt was paid, or at least until the year of jubilee; or, secondly, his *houses*. These might be sold in perpetuity, except those belonging to the Levites (Lev. xxv. 14—32). Thirdly, in case the house or land was not sufficient to cancel the debt, or if it so happened that the debtor had none, the *person* of the debtor might be sold, together with his wife and children, if he had any. This is implied in Lev. xxv. 39; and this custom is alluded to in Job xxiv. 9. It existed in the time of Elisha (2 Kings iv. 1); and on the return of the Jews from their Babylonish captivity, some rich persons exercised this right over their poor debtors (Nehem. v. 1—13). Our Lord alludes to the same custom in Matt. xviii. 25. As the person of the debtor might thus be seized and sold, his cattle and furniture might consequently be liable for his debts. This is alluded to by Solomon, in Prov. xxii. 27. It does not appear that imprisonment for debt existed in the age of Moses, but it seems to have prevailed in the time of Jesus Christ.'"—*Pictorial Bible. Note on Deut.* xv. 2.

6. Logic is applied to history in observing the rise and progress of arts and sciences :—

"At the close of the fifteenth century, an extraordinary activity was reigning in Europe. Bold investigations were remarkable everywhere. A general yearning for truer, more real science, was manifest. This movement continued during the greater part of the sixteenth century without results, owing to the absence of unity and method; a confusion also ensued, arising from the

revival of the systems of antiquity, and the mystical philosophy so pregnant with fruitless efforts. In the meantime, however, new discoveries gave a fresh impulse to the human mind. Copernicus described the true system of the world. Kepler somewhat foreshadowed the discoveries of Newton. Tycho Brahe was collecting the most invaluable observations. Then came Lord Bacon, whose great genius dissipated the mists of error, and broke down the obstacles which impeded advancement in useful science. His works present an estimate on the actual attainments in all the sciences, a catalogue of the desiderata in each department, and a detail of the methods best suited to prosecute improvements and new discoveries. The world owes to Bacon the sure method of advancing in knowledge by experiment and the observation of nature, instead of system and conjecture.

"Bacon, said Horace Walpole, has been the prophet of truths that Newton came to reveal to mankind. True; but between Bacon and Newton, a man arose who followed the track of Bacon, and inflicted a mortal blow on all systems—who created a new method and a general theory of the world: we allude to Descartes, who was the first to lay down the laws of motion, especially that all bodies persist in their present state of rest or uniform rectilineal motion, till affected by some force."

"Galileo, in 1609, constructed telescopes, and discovered the satellites of the larger planets. Kepler investigated the laws which regulate the motions of the planets, and the analogy between their distances from the sun, and periodical revolutions. The discoveries in astronomy led to improvements in navigation, and a great advancement of geometry in all its branches. Napier, in 1614, abridged calculation by the invention of logarithms. The Torricellian experiments determined the weight of the atmosphere. In 1616, Harvey discovered the circulation of the blood. The Royal Society was incorporated in 1662. The Royal Academy of Sciences was instituted by Louis XIV. in 1666; and similar institutions were founded in most of the countries of Europe. In the end of the seventeenth century arose the immortal Newton, and Leibnitz, the universal genius. Newton had discovered, before the age of twenty-four, the theory of universal gravitation, a principle which solves the chief phenomena of nature, and connects and regulates the whole machine of the universe. His theory of light and colours is the foundation of the science of optics, and his *Principia* the basis and elements of all philosophy. Locke, his contemporary, investigated the operations of the human mind, examined the soul by attending to its operations, and has been *à priori* the founder of the sensualist school of intellectual philosophy."—*Historical Analysis of Christian Civilization; by* PROFESSOR DE VERICOUR, *Queen's College, Cork.*

7. Logic is applied to history in observing the remarkable occurrences with regard to individuals or nations :—

"It is, however, a remarkable fact, that some of the greatest men, both in ancient and modern times, have been extremely unhappy in their domestic concerns. The rebellion of Absalom against his father David, and its tragical issue; the murder of Sennacherib, in the temple of the god Nisroch, by the hands of his own sons, Adrammelech and Sharezar; the severities which Augustus Cæsar was obliged to use against his only child, his daughter Julia, on account of her scandalous life; and the havoc which Herod the Great made in his own family, by the execution of his beautiful and beloved wife Mariamne, his two most promising sons, and others of his near relatives, may be adduced as instances, among a great number of others which occur in ancient history, that the highest degrees of human power, exaltation, and splendour, do not always exempt their possessors from domestic infelicity, no more than from personal misfortunes and the ordinary sufferings of mortality. To these instances, and many others in ancient history, may be added a number of a similar nature, in more modern times; among which the tragical catastrophe of Don Carlos, son of Philip the Second of Spain; and that of the Czarowitz, son of the immortal Peter the Great, of Russia, stand as conspicuous and distinguished proofs of the uncertain and fluctuating nature of all human felicity."—*Bigland's Letters on History.*

8. Logic is applied to history in deducing general principles in the science of politics :—

"Much has been said by many writers against the pernicious effects of extensive empire, but many arguments may also be adduced in its favour. The union of a numerous mass of people in one political system is one of the *surest preventives of war*, as the division of countries into a greater number of independent states is a never-failing source of predatory hostilities, of bloodshed, rapine, and anarchy. Wherever a country is thus divided, such a multiplicity of jarring interests arise, and so many objects of ambition present themselves, as cannot fail of producing continual scenes of contention, originating in the ambition, the avarice, and the jarring interests of the rulers or the subjects, which involve the people in all sorts of calamities. Instances without number might be adduced, but a glance at the state of England during the time of the heptarchy will suffice to exemplify the propriety of this observation. In an extensive monarchy there is only one great political interest, and the objects of ambition, however splendid and attractive, are fewer, and consequently within the reach of a smaller number of persons; in

such a state all tends to one central point, instead of deviating to different centres. The vast collective mass of the people is united in one political system, and in one general interest; and the different provinces which compose the empire enjoy the advantages of a free and uninterrupted commerce; a circumstance of incalculable benefit, both to individuals and to the whole community. *Supposing even an extensive monarchy to be despotic*, and the monarch himself a sanguinary and unfeeling tyrant, yet, by reason of the extent of his dominions, *only a few individuals, who most of them voluntarily bring themselves into contact with him, feel the effects of his cruelty and despotism.* Those who, from motives of ambition or interest, approach his person, and serve him as the instruments of his tyranny, are the persons who principally feel the heavy hand of the tyrant. The great mass of the people feel its pressure in a much lighter degree. Distance of situation, and the great multitude of subjects, cause individuals to escape his notice. The reverse is the case in petty states, where the eye of the tyrant is always upon the individuals of his contracted dominions; and a tyrant at the distance of a thousand miles, is infinitely preferable to a tyrant at home, at our very doors. The history of mankind affords a multiplicity of proofs, that *extensive monarchies are more conducive to the tranquillity of the world, and the general interests of humanity*, than petty states."—*Ibid.*

There are many other ways in which logic is applied to history. Such, for example, as in the investigation of the causes of "great facts"—the cause of the spread of Christianity—cause of the rise of Mahometanism—of the Reformation—of the French Revolution, &c. &c. Also, in tracing effects,—as the effects of the feudal system—of the crusades—of the discovery of America, &c. &c. I mentioned to you, at the commencement of my book, that although the mere acquiring of information is not reasoning, yet every fact in history may, in some way or other, become the subject of a reasoning process.

SECTION III.

THE APPLICATION OF THE ART OF REASONING TO POLITICAL ECONOMY.

"POLITICAL Economy" is the name which is given to the Science of Wealth. Adam Smith does not use this name, but simply calls his work "An Inquiry into the Nature and Causes of the Wealth of Nations." A political economist is one who studies or explains the doctrines of political economy. He is not merely one who believes Malthus's theory of the population, Huskisson's system of free trade, Ricardo's theory of rent, and Sir Robert Peel's opinions on the currency. These doctrines do not constitute the science; they are some of the disputed doctrines of the science. He who rejects them is, in our view, as much a political economist as he who maintains them.

I am not going to teach you political economy, but merely to give you a few hints as to the use of the art of reasoning in acquiring a knowledge of some of its principles:—

I.—The art of reasoning then will teach you that you should understand clearly the nature of the science you intend to learn.

"The science of political economy is intimately connected with the daily occurrences of life, and in this respect differs materially from that of chemistry, astronomy, or any of the natural sciences; the mistakes we may fall into in the latter sciences can have little sensible effect upon our conduct, whilst our ignorance of the former may lead us into serious practical errors. There is scarcely any history or any account of voyages or travels that does not abound with facts and opinions, the bearings of which cannot be understood without some previous acquaintance with the principles of political economy: besides, should the author himself be deficient in this knowledge, you will be continually liable to adopt his errors from inability to detect them."

"This science is essentially founded upon history,—not the history of sovereigns, of wars, and of intrigues; but the history of the arts, of trade, of discoveries, and of civilization. We see some countries, like America, increase rapidly in

wealth and prosperity, whilst others, like Egypt and Syria, are impoverished, depopulated, and falling to decay: when the causes which produce these various effects are well understood, some judgment may be formed of the measures which governments have adopted to contribute to the welfare of their people; whether such or such a branch of commerce should be encouraged in preference to others; whether it be proper to prohibit this or that kind of merchandise; whether any peculiar encouragement should be given to agriculture; whether it be right to establish by law the price of provisions or the price of labour, or whether they should be left without control; and so on. You see, therefore, that political economy consists of two parts,—theory and practice; the science and the art. The science comprehends a knowledge of the facts which we have enumerated: the art relates more particularly to legislation, and consists in doing whatever is requisite to contribute to the increase of national wealth, and avoiding whatever would be prejudicial to it."—*Mrs. Marcet's Conversations on Political Economy.*

II.—The art of reasoning will teach you to be systematic and methodical in your studies.

Dr. Watts observes, in his "Improvement of the Mind," that "the best way to learn any science is to begin with a regular system, or a short and plain scheme of that science, well drawn up into a narrow compass, omitting the deeper and more abstruse parts of it;" and he remarks in another place, that if a man in his younger days has arranged all his sentiments in any particular order, it will be much more natural and easy for him to continue to dispose all his further acquirements in the same order. And he illustrates this by the arrangement of books in a library: when we have accustomed ourselves to any particular arrangement, we can find a book more readily than if they were again to be arranged in even a better order.

Recent writers on political economy have usually divided the science into four parts,—Production, Distribution, Interchange, and Consumption. Under the first division, they have considered labour and capital; under the second, rent, profit, and wages; under the third, commerce and money; and under the fourth, the consumption of Government and that of individuals. It cannot be

denied that there is a neatness in this division, and doubtless all the topics of the science may be discussed under one or other of these heads. If you like this plan, you can adopt it. But perhaps we cannot have a better division of the science than the Nature, Causes, and Effects of National Wealth. Under the first head, you might enumerate the articles that constitute wealth; under the second head, specify the causes; and under the third head, trace the consequences of wealth on the happiness, intelligence, and Morals of the population, &c. The main object of a plan is to assist the memory by a systematic arrangement of your knowledge; and the next object is to be able to adjust under some head or division of your plan, any additional knowledge you may acquire.

The NATURE of national wealth is thus described by one who was both a poet and a monarch:—

"Rid me, and deliver me from the hand of strange children, whose mouth speaketh vanity, and their right hand is a right hand of falsehood: that our sons may be as plants grown up in their youth; that our daughters may be as corner stones, polished after the similitude of a palace: that our garners may be full, affording all manner of store: that our sheep may bring forth thousands and ten thousands in our streets: that our oxen may be strong to labour; that there be no breaking in nor going out; that there be no complaining in our streets. Happy is that people, that is in such a case: yea, happy is that people, whose God is the Lord."—*Psalm* cxliv. 11—15.

The CAUSES of wealth may be thus enumerated:—

1. The physical characteristics of a country are a source of its wealth.

"Moses, in describing the Land of Promise, uses the following language; and, like a skilful orator, fixes upon those points in which Canaan was superior to Egypt: 'For the land whither thou goest in to possess it is not as the land of Egypt, from whence ye came out. But the land is a land of hills and valleys, and drinketh water of the rain of heaven.' 'The Lord thy God bringeth thee into a good land, a land of brooks of water, of fountains and depths that spring out of valleys and hills. A land of wheat and barley, and vines, and fig-trees, and pomegranates. A land of oil olive, and honey. A land wherein thou shalt

eat bread without scarceness, thou shalt not lack anything in it. A land whose stones are iron, and out of whose hills thou mayest dig brass.' This may be regarded as a negative description of Egypt. The land of Canaan was not, like the land of Egypt, a level country on which there was no rain, but whose fertility was caused by the overflowing of the river. It was a land of hills and valleys, which drank water of the rain of heaven; it was, also, more picturesque, and afforded everywhere a constant supply of water for themselves and their cattle, for it had brooks of water, and fountains springing out of valleys and hills; it not only produced, like Egypt, wheat and barley, but also vines, and fig-trees, and pomegranates, and oil olive, and honey, which Egypt did not produce: and, moreover, Egypt had no mines of copper or of iron; but this is 'a land whose stones are iron, and out of whose hills thou mayest dig brass.' "—*Lectures on Ancient Commerce.*

2. The moral habits of its population are a source of its wealth.

"He that loveth pleasure shall be a poor man; he that loveth wine and oil shall not be rich.—The drunkard and the glutton shall come to poverty, and drowsiness shall clothe a man with rags.—He that tilleth his land shall be satisfied with bread, but he that followeth after vain persons shall have poverty enough. —He that is slothful in his work is brother to him that is a great waster.—A prudent man foreseeth the evil, and hideth himself; but the simple pass on and are punished.—The sluggard will not plough by reason of the cold; therefore shall he beg in harvest, and have nothing.—Love not sleep, lest thou come to poverty. Open thine eyes, and thou shalt be satisfied with bread.—In all labour there is profit: but the talk of the lips tendeth only to penury."—*Book of Proverbs.*

"Let us, in conclusion, take for our practical government our last observation—the commerce of a country depends upon the character of the people. Let us never forget, that the main cause of the prosperity of any country or of any city lies in the mental and moral character of its inhabitants. Every possible advantage of situation may be rendered nugatory by the misconduct of the people. If, instead of availing themselves of these natural advantages, and persevering in the steady pursuits of trade, the merchants neglect their business, or have recourse to swindling, or gambling, or smuggling, they will assuredly bring upon themselves that ruin and degradation which such practices never fail to produce. It is by honesty, by industry, by prudence, by perseverance, and by public spirit that nations and cities are made to prosper."—*Lectures on Ancient Commerce.*

3. Political institutions are a source of wealth,—such as security of property, a good government, wise laws, and the impartial administration of public justice.

"The right of private property can be secured only by law; and the laws affecting property are more numerous in commercial than in other countries; because the modes of acquiring and conveying property are more numerous, and the rights of different claimants cannot be so easily defined. Commerce is affected by all laws relating to the production of commercial commodities—the mode of transferring property—the facility of transport—the laying on of taxes—or the punishment of crimes. Besides these general laws, which affect all branches of commerce, there are in many countries laws affecting particular trades, or the export and import of particular commodities."—*Ibid.*

4. Social institutions are a source of wealth,—as mints, banks, post-offices, roads, canals, railways, harbours, exchanges, markets, &c. &c.

"Banking institutions cannot flourish in any society in which property is insecure, whether that insecurity arises from the tyranny of the government, the turbulence of the people, or the incursions of foreign enemies. In oriental countries, where the possession of wealth invites the rapacity of the government, people conceal their wealth by burying it in the earth, and hence we read in Scripture of 'treasures hid in a field.' A similar practice prevailed in Europe during the times of the feudal system; and treasure-trove was a source of royal revenue, as all the concealed treasure, when found, belonged to the king. In the early ages of Greece property was very insecure; partly from the turbulence of the people, partly from the incursions of the neighbouring states. In this state of society, the temples were employed as banks. People who had got money lodged it with the priests, and the sanctity of the place preserved it from violation. Even hostile tribes would not take this treasure, lest they should incur the vengeance of the deity to whom the temple was consecrated."—*Ibid.*

5. Commerce is a source of wealth.

"Tyre is thus described in the Holy Scriptures: 'A joyous city, whose antiquity is of ancient days, whose merchants are princes, whose traffickers are the honourable of the earth.'—'Tyrus did build herself a stronghold, and heaped up silver as the dust, and fine gold as the mire of the street. When the waves went forth out of the seas, thou filledst many people; thou

didst enrich the kings of the earth with the multitude of thy riches and of thy merchandise.' "—*Ibid.*

6. Manufactures are a source of wealth.

"Manufacturing nations rise to wealth from the additional value which they give to the raw materials; for there is an immense difference between the value of the raw materials and the value of the same materials in a manufactured state. Thus, for instance, it has been stated that a pound of cotton wool, when spun, has been worth five pounds sterling; and when wove into muslin, and ornamented in the tambour, is worth fifteen pounds, yielding 5,900*l.* per cent. on the raw material. An ounce of fine Flanders thread has been sold in London for four pounds. Such an ounce made into lace may be sold for forty pounds, which is ten times the price of standard gold, weight for weight. Steel may be made three hundred times dearer than standard gold, weight for weight. Six steel wire springs for watch pendulums weigh one grain, to the artist seven shillings and sixpence each, equal to two pounds five shillings. One grain of gold costs only two-pence. So a service of cut glass, or of fine porcelain, will cost many hundred times the value of the raw materials of which it is composed."—*Ibid.*

7. Colonies are a source of wealth. They are a certain market for your manufactures; they supply you with food and raw materials; they are a place whither your surplus population may emigrate; and in case of war, they are out-posts of defence.

"The Greeks established colonies for the purpose of getting rid of a superabundant population, and their colonies soon became independent. The Roman colonies were established partly for the same purpose, and partly for the purpose of acting as garrisons, and thus keeping possession of the countries they had conquered. The Tyrians and Carthaginians established colonies for the purpose of extending their trade. The Tyrians are said to have planted forty colonies in different parts of the Mediterranean, and the Carthaginians periodically sent out a number of their citizens in new places where they thought an advantageous trade might be opened."—*Ibid.*

After noticing the NATURE and the CAUSES, you may notice the EFFECTS of wealth.

"'Tis not correct that the possession of wealth, honestly acquired, has any tendency either to enervate the intellect, to corrupt the morals, or to impair the happiness of man. The fact is the reverse. 'Tis poverty which is the source of crime—'tis

poverty which is the great barrier to the acquisition of knowledge —'tis poverty which is the great source of human woe. If you wish to increase your knowledge, increase your wealth: you will then have more leisure to study, and be better able to purchase the means of instruction. If you wish to increase your virtue, increase your wealth: you will then have a higher character to support, and fewer and less powerful temptations to act dishonourably and disreputably. If you wish to increase your happiness, increase your wealth: you will then have more numerous sources of pleasure, and, above all, you will be able to indulge in the luxury of doing good. Away with the notion that wealth is an evil. If wealth be an evil, industry is a vice; for the tendency of industry is to produce wealth. If wealth be an evil, commerce should be abandoned; for the object of commerce is to acquire wealth. If wealth be an evil, those efforts which are made by benevolence or patriotism, to improve the condition of the poor, are deserving, not of support, but of execration. But wealth is not an evil. However much the doctrine may have been countenanced by mistaken moralists or dreaming poets, it has never been generally acted upon, for it is one opposed to the common sense of mankind. Both to individuals and to nations wealth is a blessing. It is only when nations become wealthy that the population are well fed and well clothed, and reside in roomy habitations well furnished. It is only when nations become wealthy that the cities and towns have wide streets, well formed for carriages and for foot-passengers, and apparatus for conveying the water to every private habitation, and for supplying light in the streets at night. It is only when nations become wealthy that famines are less frequent, epidemic and contagious disorders less fatal, and institutions are formed for relieving the distresses and promoting the education of the poor. It is only when nations have become wealthy that men have leisure for study—that literature flourishes—that science is explored—that mechanical inventions are discovered—and that the fine arts are patronized and encouraged:—all these are the effects of wealth."—*Ibid.*

III.—The art of reasoning will teach you how to apply general principles to practical cases.

The general principles of political economy differ from those of geometry. In the first place, these principles are not self-evident, but are inferences derived by induction from a series of facts; and, secondly, they possess only a moral, not a mathematical universality.

"That a free commercial intercourse amongst different nations would be for their mutual advantage, is a proposition which is very generally true; and being so, every proposal for restriction

on commerce may be fairly presumed to be inexpedient till the reverse be established. There can, however, be no manner of doubt that there are cases, though but few in number, in which nations would grossly overlook their own interests if they permitted a free intercourse with their neighbours. Suppose, for example, we had a monopoly of the supply of coal, it would not be difficult to show that it would be good policy, with a view to the increase of national wealth and security, either wholly to prohibit, or to lay a high duty on its exportation; and so in other instances. The recent history of the theory of population affords a striking instance of the abuse of general principles, or rather of the folly of building exclusively upon one set of principles, without attending to the influence of the antagonist principles by which they are partly or wholly countervailed. The principle of increase, as explained by Mr. Malthus, and more recently by Dr. Chalmers, appeared to form an insuperable obstacle to all permanent improvement in the condition of society, and to condemn the great majority of the human race to a state approaching to destitution."

"The real difficulty does not lie in discussing matters connected with this science, in the statement of general principles, or in reasoning fairly from them: but it lies in the discovery of the secondary or modifying principles, which are always in action, and in making proper allowance for their influence.... Generally, indeed, we may predicate, with considerable confidence, the more immediate results that would follow the adoption of any novel system of measures; but it is extremely difficult, or rather, perhaps, impossible, without an extensive analogous experience, to foretell its remoter consequences; because we must, in the absence of such experience, be necessarily in the dark respecting the nature and influence of the modifying principles which a change of measures would no doubt bring into action."—*M'Culloch's Principles of Political Economy.*

IV.—The art of reasoning will teach you the best ways of increasing your knowledge of the subject.

In the pursuit of information, you should read chiefly those works that are practically useful. Read such books as Dr. Kane on the Industrial Resources of Ireland; the Letters of the "Commissioners" of the *Times* and *Morning Chronicle;* the various Trade Circulars; and the Public Documents issued by the Government. Take every opportunity of going over dockyards, warehouses, and manufactories; and there trace the production of commodities, from the raw material to the finished article. And be

sure you go to the Industrial Exhibition. Get a catalogue beforehand, and mark those things you intend more minutely to inspect. This will save your time when you arrive; and you will be able to employ your opportunities more effectively and profitably.

When you read history, you will observe that the sources of national wealth were as well understood in ancient as in modern times. That more corn could be produced from the soil than was necessary for the wants of the population, and the surplus could be sold to foreigners, was as well known in Egypt and Sicily as it is now known in Poland and Canada; the effect of manufactures to produce wealth was as well understood in Tyre and Corinth as it is now in Birmingham and Manchester; "ships, colonies, and commerce" were as highly appreciated at Athens and at Carthage as they have since been at Amsterdam and London; and the Romans knew the advantages to be gained by facility of intercourse as well as it is now known by the advocates of our modern railways. And with regard to moral causes: that industry, frugality, and prudence, are the road to wealth, is as distinctly taught in the Proverbs of Solomon as in any of our modern systems of political economy; and the denunciations of the prophets against fraud, robbery, injustice, and oppression, are proofs that they taught the doctrine, that security of property is essential to national prosperity.

I advise you thus to study political economy. Study it because it is interesting, and will form an agreeable recreation to your reasoning faculties. Study it because it concerns the welfare of others; and a new discovery of any important principle may cause you to become a public benefactor. Study it because it contains no principles adverse to morality and religion, and the investigation of its doctrines is not attended with that danger to which weak minds are exposed by the study of the abstract principles of morals and metaphysics. Study it because it will lead your mind into the contemplation of the divine wisdom and goodness, manifested no less in the organization of society than in the construction of the material universe.

SECTION IV.

THE APPLICATION OF THE ART OF REASONING TO STATISTICS.

1. THE nature and extent of the Science of Statistics is thus described in the Sixth Annual Report of the Statistical Society of London:—

"The first sentence of the prospectus of the Society, issued in 1834, which states that the object of its establishment is 'to procure, arrange, and publish facts calculated to illustrate the condition and prospects of society,' contains, perhaps, the best definition of statistics which has yet been attempted; and, if it be imperfect, its imperfection assuredly consists in its being, not too narrow, but too comprehensive. Statistics, as thus defined, and as a branch of study worthy of our efforts, are assuredly not the mere 'method' of stating the observations and experiments of the physical or other sciences, as seems, in some instances, to have been supposed. Such was not the duty assigned to this Society by its founders;—it was not to perfect the mere art of 'tabulating' that it was embodied;—it was not to make us hewers and drawers to those engaged on any edifice of physical science:—but it was that we should ourselves be the architects of a science or of sciences; the perfecters of some definite branch or branches of knowledge, which should do honour to ourselves and our country, and at the same time to the distinguished men who summoned us to the labour; the elaborators, in fine, of truths which we feel to be necessary to our happiness, but which are yet wholly hidden from us, or but partially revealed."

"The whole field of our labours appears to be divisible into the following chief sections:—

"I. The Statistics of Physical Geography, Division, and Appropriation; or geographical and proprietary statistics.

"II. The Statistics of Production; or agricultural, mining, fishing, manufacturing, and commercial statistics.

"III. The Statistics of Instruction; or ecclesiastical, scientific, literary, and academical statistics.

"IV. The Statistics of Protection; or constitutional, legal, judicial, and criminal statistics.

"V. The Statistics of Consumption and Enjoyment; or of population, distribution, consumption, diversions, life, health, and public and private charity."

2. The importance of the science is now universally acknowledged. It is manifested in the attention paid by the Government to the register of births, marriages, and deaths, and by the anxiety shown at the present time with regard to the census. It was not always so. On the 17th

of October, 1823, I addressed the following letter to the then prime minister, the Earl of Liverpool:—

"It is hardly necessary to inform your Lordship that the bills of mortality, which are published at stated periods, are extremely imperfect. They include merely an account of the christenings and funerals which take place at the churches of the established religion; whereas every dissenting minister administers the funeral and baptismal services, and consequently every dissenting place of worship, however obscure, has a distinct register of christenings, and many of them a separate burial-ground. The union of all these registers is necessary to form a correct estimate of the births and deaths throughout the country.

"But even this would not be sufficient. The Baptists, a sect which is now very numerous, and is still increasing, never baptize their children; and consequently no register is kept of the births of the descendants of this denomination.

"Under these circumstances, I beg leave to suggest to your Lordship the propriety of establishing a public register of all births (not baptisms), marriages, and deaths that may occur in the nation, including all the circumstances of sex, age, and occupation of the parties.

"The difficulties to be surmounted in order to the establishment of such a register, do not appear to be formidable. If it were kept by a civil officer, as the justice of peace, it would not interfere with religious prejudices. The church registers might still be continued as at present. It would only be necessary that a copy from each parish should be transmitted to the General Register Office in London, and that the births and funerals not recorded in the church books, should be required, under a stated penalty, to be registered in the civil courts, and from thence to be transmitted to the General Office. Thus a perfect register of the whole kingdom might be obtained at a very inconsiderable trouble or expense. The names enrolled in this general register might be subjected to various classifications according to the specific object in view.

"The utility of such a measure is obvious. Independently of its use in ascertaining the descent of every individual, and thus preventing disputed successions, it would possess numerous advantages. The system of insurance on lives would be perfected. The influence of different occupations, or of different parts of the country, in extending or abridging the term of human life, would be clearly exhibited. The theories which are now advocated in regard to population, would be confuted or confirmed. A variety of useful truths, equally curious and important, would be elicited; and the science of political economy, instead of resting on probability and conjecture, would be founded on the rock of mathematical certainty. It would then be easy to ascer-

tain the exact number of each respective class, or of any given age in society; and the information thus obtained might be usefully applied to subjects connected with taxation, to quotas required for military service, and to a variety of other subjects.

"Had such a register been established three centuries ago, what a fund of knowledge would it supply; what a number of tedious and expensive lawsuits would have been prevented; how many visionary theories would have been suppressed; how distinctly should we be able to trace the progress of national prosperity; and how highly should we esteem the author of so useful a regulation."

3. The facts with which this science is conversant are those which are susceptible of being represented and registered by figures. Its arithmetical operations are chiefly multiplication and division, the calculation of ratios, and the construction of tables.

In treating of the relation of a whole and its parts, in the second section of the second part of this work; I have observed that we employ multiplication, when we wish to magnify the importance of any matter, and division when we wish to produce a contrary effect. Thus if a party wished to show that the Established Church is in possession of enormous wealth, he would endeavour to obtain an account of all ecclesiastical property, and present it in one sum. But if another party wished to produce a different impression, he would divide this sum by the number of clergymen, and contend that upon an average they do not receive, individually, a higher income than an educated man should receive for the kind of duty he performs. It was by simple multiplication that Mr. G. R. Porter ascertained the amount spent annually in the purchase of Spirits, Beer, and Tobacco—sums which he happily styled "self-imposed taxes." The following is the amount taken from the paper he read on the subject last year, at Edinburgh, before the Statistical Section of the British Association :—

British and Colonial Spirits	£20,810,208
Brandy	3,281,250
Total of Spirits . .	24,091,458
Beer of all kinds, exclusive of that brewed in private families	25,383,165
Tobacco and snuff	7,588,607
Total self-imposed taxes . . .	£57,063,230

When we wish to compare a number of things together in some one respect, we employ a ratio. The ratio usually employed is a per centage. For example, if we wish to show the number of crimes in each county or district, as compared with its population, we should place in one column the population of each county, and, in an adjoining column, the number of crimes in each county. We should then reduce these figures to a ratio, that is, we would, by the rule of three, ascertain what *per cent.* in each county the crimes bore to the population. We might then, in making our comparisons, dispense with both the preceding columns; and place against the name of each county its per centage of crime.

A series of figures may be placed either longitudinally or horizontally. In the former case they are called a *column* of figures; and in the latter case a *row* of figures. A *table* of figures combines both. Several columns of figures are placed side by side, but at the same time there is a connexion between all these columns horizontally.* Such a table admits of being added together in two ways. You may add longitudinally, and place at the bottom the amount of each *column;* and you may add horizontally, and place in a column at your right hand, the separate amount of each *row.* You will understand what I mean by the following table, which I have taken from "The Statistical Companion," published by T. C. Banfield and C. R. Weld, of the Royal Society:—

Classified Abstracts of the numbers of Electors in the Counties, Cities, and Boroughs of Great Britain, for the year 1846. *The total number of registered Electors in* 1846 *was as follows:—*

	Counties.	Cities and Boroughs.	Total.
England	475,036	342,342	817,378
Wales	37,340	11,205	48,545
Scotland	48,953	29,597	78,550
Totals	561,329	383,144	944,473

All tables are not drawn up in this form. Some consist only of a series of columns placed side by side without

* See the description of the horizontal system of bookkeeping in Gilbart's Practical Treatise on Banking, p. 325.

any horizontal connexion, and sometimes the columns are not added up longitudinally.

4. From the facts represented and registered by the figures, the statician endeavours to deduce new truths.

There is scarcely a science from which so many useful truths may so readily be drawn as from statistics. By new truths I mean, of course, truths that are new to us. No truth is new in itself. The doctrine of gravitation was a truth in itself before it was discovered by Newton. But he made us acquainted with it. It is only in this sense that any truth can be new. By statistics many discoveries have been made—discoveries, too, of great importance—and made by very simple means. For instance, it was a new discovery in Edinburgh, last year, that the annual consumption of spirits in Scotland was in the proportion of $11\frac{1}{6}$ gallons to every individual; while in Ireland it was in the proportion of $3\frac{1}{3}$ gallons, and in England it was only in the proportion of $2\frac{1}{3}$ gallons. It was also a new truth that the wealth of the lower classes is increasing—and increasing too in a higher proportion than that of the higher classes. For these truths we are indebted to Mr. Porter.

"PROPORTIONS OF RICH AND POOR.—In a paper read by Mr. Porter before the British Association, he shows that it is altogether a mistake to suppose that the rich are growing richer, and the poor are becoming poorer in this country, for there is abundant evidence of a much larger increase in the numbers of the middle classes than of either the rich or the poor. He states that between 1831 and 1848 there was a great proportionate increase in the number of small dividends paid at the Bank of England to the holders of money in the funds. Also that the incomes from trades and professions above 150*l.* a-year, which paid income tax, only amounted in 1812 to 21,247,621*l.*, whilst in 1848 they amounted to 56,990,224*l.*; and that the incomes below 500*l.* a-year had increased several millions beyond any other class of incomes. Further, that the personal property on which probate duty was paid, increased from 14,757,420*l.* in 1811, to 44,348,721*l.* in 1848,—of which the increase was chiefly in the smaller properties. The conclusion of Mr. Porter is justified by these figures, and it is one that should remove the popular prejudice on the subject—a prejudice that is equally painful and mischievous."

These new truths are sometimes discovered by simple multiplication and division as already shown; sometimes

by ratios, and sometimes by placing interesting informa- in a tabular form.

When our figures are chronological registers of facts, new and highly important truths are sometimes ascertained by merely observing if any specific facts re-occur at certain periods. When we have ascertained any uniformity in the occurrence of certain events, we call that uniformity a LAW. Thus those uniformities that were found to occur in regard to the deaths at various ages, are now called the Laws of Mortality. A few years ago a Committee of the House of Commons published the average *monthly* circulation for several years of the notes that had been issued respectively by the Bank of England, the Country Banks, the Banks of Scotland and the Banks of Ireland. From these returns Mr. Gilbart deduced what he terms "The Laws of the Currency:"—

"We will take the monthly returns of the circulation for the period that is past, that is, from the end of September 1833 to the end of 1843, and endeavour, by observing their various revolutions, to discover if they are governed by any fixed causes or principles—to ascertain if those principles are uniform in their operation; and if we should discover that the revolutions of the currency are regulated by any uniform principles, we shall call those principles the Laws of the Currency.

"We shall begin with that portion of the currency which consists of notes issued by the Bank of England. On looking over the monthly circulation of the Bank of England, given in the Table, No. 34, in the Appendix to the Report of 1840, we observe, that the circulation of the months in which the public dividends are paid is higher than in the subsequent months. Thus, the average circulation of January is higher than that of February or March. The circulation of April is higher than that of May or June. The circulation of July is higher than that of August or September. And the circulation of October is higher than that of November or December. This, then, we may consider as one law of the circulation of the Bank of England—that it ebbs and flows four times in the year, in consequence of the payment of the quarterly dividends. This law does not apply to any other bank, as all the Government dividends are paid by the Bank of England."

"On inspecting the monthly returns of the country circulation for the last ten years, we find that the highest amount is in the month of April: thence it descends, and arrives at the lowest point by the end of August, which is the lowest point in the year. It gradually increases to November; a slight reaction

takes place in December: but it then advances until it reaches the highest point in April. The general law is, that the country circulation always makes one circuit in the year—being at its lowest point in August, and advancing to December, and continuing to advance to its highest point to the month of April, and then again descending to its lowest point in August."

"In Scotland the lowest point of the circulation is in March, and the highest in November. The advance, however, between these two points is not uniform—for the highest of the intervening months is May, after which there is a slight reaction; but it increases again until November, and falls off in December. The reason of the great increase in May and November is, that these are the seasons of making payments. The interest due on mortgages is then settled, annuities are then paid, the country people usually take the interest on their deposit receipts, and the servants receive their wages. There are frequently large sums transferred by way of mortgage. It is the custom of Scotland to settle all transactions, large as well as small, by bank notes—not by cheques on bankers, as in London. It is remarkable that these monthly variations occur uniformly every year, while the amount of the circulation in the corresponding months of different years undergoes comparatively very little change."

"From what we have already said of the laws of the currency, those of our readers who are acquainted with Ireland will be able to judge beforehand of the revolutions of her circulation. Being purely an agricultural country, the lowest points will of course be in August or September, immediately before the harvest, and the commencement of the cattle and bacon trade. Then it rises rapidly, till it reaches its highest point in January, and then gradually declines. As an agricultural country, we should naturally expect that during the season of increase the circulation would expand most in the rural districts; and so we find that the circulation of the Bank of Ireland in Dublin, expands very moderately—that of her branches, which are located chiefly in large towns, expands more—while the circulation of the joint-stock banks, which are located in the agricultural districts, receives the largest increase. Again, the purchases and sales of agricultural produce are known to be in small amounts; and hence the notes of the smallest denomination receive the largest relative increase. The annual changes of the Irish circulation are governed chiefly by the produce of the harvest, and the prices of agricultural products. These are the laws of the circulation of Ireland."—*Gilbart's Practical Treatise on Banking.*

The figures which represent tangible objects often indicate truths of an intellectual and moral character. Thus, if we found that the consumption of spirits had decreased in a district, while the consumption of tea and coffee had

increased, we should infer that the population had become more temperate; and if the number of schools had increased, we should infer that the people had become better instructed. The following statistics, from Dickens's "Household Words," are an indication of the intelligence of the inhabitants of London.

"The area of a single morning paper—'The Times,' say—is more than nineteen and a half square feet, or nearly five feet by four. Compared with an ordinary octavo volume, the quantity of matter daily issued is equal to three hundred pages. There are four morning papers whose superficies are nearly as great without supplements, which they seldom publish. A fifth is only half the size. We may reckon, therefore, that the constant craving of the Londoners for news is supplied every morning with as much as would fill about twelve hundred pages of an ordinary novel, or not less than five volumes."

5. The relation of cause and effect has a close connexion with statistics. Indeed we may almost give the same definition of statistics which has been given of philosophy, the "science which teaches the causes of things."

We discover the "causes of things" in various ways.

Sometimes statistics will merely give us the facts, and we have to ascertain the causes from other sources. Thus we have fluctuation in the prices of corn—of the funds—and we have to judge of the causes. Here there is much room for difference of opinion. For instance, Statistics will tell us that there was a great fall in the price of the funds in February 1848—History will tell us that just before this, occurred the revolution in France. We may therefore infer with confidence that the French revolution was the cause of a decline in the English funds. But generally the relation of cause and effect is less obvious and less sudden, and consequently there is more occasion for sound reasoning.

Sometimes the causes of things are discovered by taking two similar series of figures from two different *localities*. Thus at the time of the cholera the number of deaths was registered in a district where the people drank impure water, and in another district where the people drank pure water: and as the deaths were far more numerous in the former locality it was inferred that impure water produced the cholera. So in India the number of

deaths from disease in the different regiments stationed in different parts of India was ascertained, and it was inferred that in the places where the deaths were most numerous the climate was most unhealthy.

Sometimes "the causes of things" are discovered by taking similar series of facts at different *periods*. Thus the number of letters passed through the Post Office before the adoption of "the penny postage," and subsequent to that event, will show the effect of that measure in increasing the number of letters.

Sometimes causes are shown by two series of figures—one representing the effect and the other the cause. Thus, if we have from various districts a series of figures showing the number of schools in each district, and another column of figures showing the number of crimes committed in each district, and if we find that generally the number of crimes is in an inverse proportion to the number of schools, we may then infer that want of education is the cause of crime.

Causes are often discovered by various and minute classifications. We ascertain the number of people that die annually out of a given population. With this knowledge only we should do as the Amicable Insurance did when first established,—charge the same premium on all lives indiscriminately. But we classify this total according to their ages, and hence we can charge a premium proportionate to the age. We go further, and classify the male and female lives; and again we vary our premiums. We may again subdivide according to the districts, and ascertain how far the probabilities on life in the country vary from those in cities. Again, we may classify according to employments, and ascertain the influence of employments on the duration of human life. So; we may take a number of criminals and classify them according to their antecedents,—that is, according to their previous circumstances in regard to age, residence, employment, character of parents, education, &c. &c., and hence attempt to discover those circumstances that lead to the formation of character, and therefore tend to produce crime.

The principle of classification—that is, of genus and species—is of very extensive use in statistics; and we can rarely apply it in any case without obtaining some impor-

tant information. This remark is illustrated in the following table, from the Statistical Companion :—

NATIONAL DEBT.—*Numbers and Classification of Fundholders.*

Persons entitled to receive Dividends October 10, 1846.	Persons entitled to receive Dividends October 10, 1847.	Amount of Dividend each Person was entitled to receive.
No.	No.	£
50,008	51,009	Not exceeding 5
24,978	25,274	" 10
53,829	54,145	" 50
13,119	13,087	" 100
6,893	6,889	" 200
1,903	1,917	" 300
1,225	1,203	" 500
529	520	" 1,000
164	163	" 2,000
92	97	Exceeding 2,000
152,740	154,904	

Showing that the number of persons thus entitled to Dividends on the 10th October, 1847, was 2,164 more than at the same period of last year, by far the largest portion of the increase being in the smallest amounts.

6. In reply to a statistical argument, Mr. Canning exclaimed :—"Not figures, but facts." All figures should represent facts. But we cannot deny that even the facts represented by figures may, like other facts, become the basis of erroneous reasoning.

Our reasoning may be erroneous from the inaccuracy of the *data*. In some cases no records may have been kept, and hence we have no authenticated facts. From this cause our reasoning may be defective respecting the populousness of ancient nations—the average duration of life in the middle ages—the amount of the revenue the pope derived from England previous to the Reformation. Sometimes when records have been kept they are defective. Thus, the produce of the gold and silver mines in America and in Russia has been calculated from the amount of the duty paid to the State. But of course we have no record of the cases in which the duty has been evaded. We have records of the importation of tobacco, but we can have no records of the quantity introduced by smugglers. We know the quantity of spirits that pay duty in Great Britain and Ireland every year, but we have no records of the illicit distillation.

So in taking our series of figures from different countries, we are liable to error in making comparisons between

those things to which these series of figures may respectively refer. The *prices* of commodities, for instance, though referring to things called by the same name, may not refer to things of the same kind or the same quality. In comparing the wages of different countries, we may be led astray, for the quantity of labour rendered in return for these respective rates of wages may very much differ. When the union between England and Ireland was under consideration in the House of Commons, Mr. Wilberforce presented a petition from the Woollen Manufacturers of Yorkshire, praying to be protected against the low wages of Ireland. It was presumed that if woollen manufactures were established in Ireland, they would be able, from the low rate of wages, to undersell those of Yorkshire. Certain duties called "Union duties," were accordingly continued for twenty years. But though those duties have ceased for thirty years, the woollen manufactures, notwithstanding the low wages, have shown no disposition to take flight from Leeds to Galway.

We are sometimes led astray in making comparisons between two series of figures, by confining our attention simply to the figures, without noticing the different circumstances of the respective periods to which those figures refer. Thus, during the commercial pressure of 1847, the Chancellor of the Exchequer stated to some deputations that waited upon him on the subject, that the restrictions on the issue of Bank notes, by the act of 1844, could not be the cause of the pressure, for the amount of notes then in circulation was higher than it had been in former years when no pressure existed. It was afterwards stated before the Parliamentary Committee, that of the notes in circulation, above 4,000,000*l.* were locked up in the vaults of the London and Country Bankers, as a provision for any demand that might be made upon them for payment of their notes or deposits.

Sometimes, as we have stated, two series of figures will, by their correspondence, show that the facts denoted in one series, are the cause of the facts denoted in the other series. But this will not be uniformly the case. We cannot always conclude that, because two rows of figures increase simultaneously, therefore the facts registered by one series of figures are the cause of the facts

registered in the other series. The *Morning Chronicle* produced two series of figures—the one showing the increase in the number of boys who attended the Ragged Schools—the other showing the increase in the number of juvenile culprits, brought before the police magistrate. It seems that within the same period of time, both the series of numbers had increased. It was, therefore, inferred that the establishment of the Ragged Schools had been the cause of an increase in the number of juvenile thieves. In reply to this inference, the *Christian Times* observes :—"As to the specific value of the statistical figures of the *Morning Chronicle*, we conceive the utmost merit that can be allowed them, is to consider them another ingenious illustration of the frequent fallacy *cum hoc propter hoc:* for more they can never pass, since they have not a whit better claim to be regarded as proofs than the declaration of a country cousin of ours the other day, who maintained that England had been falling ever since apple-dumplings on a Sunday went out of fashion. Our contemporary might, with equal truth, have shown that the increase of juvenile delinquency had kept pace with the increase of railway traffic, or with the sale of Banbury cakes, or the new discovery of apricot lozenges, or with the use of the magnetic telegraph : and there would have been this advantage in these comparisons—that they are facts. *Many things have a co-existence, and preserve a marvellous ratio in their increments, and yet have not the remotest connexion as cause and effect;* and this, we are convinced, is the predicament of the accidental co-increase of juvenile rogueries and Ragged Schools."

Another case in which statistics have been found to be at fault, is in regard to the future. No one can doubt the beneficial effects of the penny postage. Yet it cannot be denied that those calculations which were made to show that this measure would increase the Revenue to the State have not been realized. So those calculations which were made a few years ago, by distinguished staticians, as to the lowest price at which foreign corn could be imported into England, have not hitherto turned out to be correct. Perhaps, in these cases, our reasonings more than our calculations have been fallacious. We may, by statistics, establish the truth of general principles. And as a general

rule, we may assume that the future will resemble the past. But as the influence of general principles is liable to be counteracted by special circumstances, we cannot predict the future without having also a previous knowledge of those special circumstances. It is the business of statistics to calculate, not to prophesy.

SECTION V.

THE APPLICATION OF THE ART OF REASONING TO MORAL PHILOSOPHY.

MORAL Philosophy has been defined by Paley as the science that teaches men their duty, and the reasons of it. It is thus described by Dr. Croly:—

"Moral philosophy is the teaching of human happiness, in the hands of man; as religion is the teaching of human happiness, in the hands of the Creator. It is the history of the rules, impulses, and objects of human virtue. It was the earliest of all studies; for the obvious reason, that it was the most essential. The first associations of men must have felt the value of truth, of a respect for property, and of the avoidance of mutual injury. Thus, we can expect no practical *discoveries* in morality, its principles being fixed by the primal necessities of our nature. Still, *though no practical difficulties exist in its rules, their grounds, their action, and their objects abound in the most refined problems.* The distinction of vice and virtue, the supreme good, the foundation of obedience, the rights of man, the origin of evil, have exercised the subtlest intellects since the days of the illustrious author of the Proverbs; a volume to which may be traced the greater portion of all the Eastern maxims; the doctrines of the early sages, known as the 'wise men of Greece;' and, perhaps, the principles of the three great schools, the Platonic, the Stoic, and the Epicurean. With the restoration of learning in Europe, the subject was resumed, and has occupied powerful minds, from the logical acuteness of Hobbes and the profound learning of Cudworth, down to the dexterous simplicity, but dubious conclusions of Paley. To be 'able to give a reason of the hope that is in us,' is a divine command. Next in importance is, to be able to give to *ourselves* a reason for our duties. But, to give that reason requires the study of moral philosophy." —*National Knowledge, National Power.*

In the application of logic to this science, we may observe:—

1. Logic will teach us that there are moral truths.

"The first proposition which I assume, and which I wish you to bear in your minds as firmly established, is, that *there are moral truths*. So, however, it is. I am solicitous that you should, from the very first, constantly carry with you the firm conviction and clear apprehension of this proposition. And I venture to say, that if there be firmly established in your minds a conviction that there are moral truths, many of the difficulties which arise, respecting morality in general, will vanish of themselves, or will be easily removed.

"Perhaps the best way of illustrating this doctrine, that there are moral truths, is by mentioning some of the most simple and familiar propositions of this kind, which are commonly delivered and assented to by men, both on practical occasions, and in the course of speculative discussions. Of this kind are the following:—That murder, theft, robbery, adultery, are wrong; that breach of promise is wrong; that a man cannot liberate himself from the obligation of his own promise; that it is wrong to treat a person as a mere thing; that we must, in general, recognise the authority of the law of the land; that the law ought to conform to justice; that when a man acts against his conscience, his act is morally wrong. *Of this kind*, I say, are moral truths. I do not say that all these are certainly moral truths. I do not say this *at present*, at least. Still less do I say that all these propositions are evidently true, or that they do not admit of limitations and exceptions; but I say that there are moral truths of *this kind*. If any of those which I have enumerated be not exactly true, or not true without exception, then there are corrections of them which *are* the truths at which I point;—then the proposition properly limited by exception *is* such a truth as I mean. Every body, upon every occasion in which man's moral nature comes into question,—and what occasion is unconnected with man's moral nature?—every man, I say, upon every occasion, is ready to utter and to assent to propositions such as these; if not exactly these, still *such* as these. And I say, that this perpetual enunciation and acceptance of such propositions implies, and makes it indisputably certain, that they have in them a substantial truth."—*Whewell's Lectures on Systematic Morality.*

"The view which I take of this subject is briefly as follows:—

"It is manifest to every one, that we all stand in various and dissimilar relations to all the sentient beings, created and uncreated, with which we are acquainted. Among our relations

to created beings are those of man to man, or that of substantial equality, of parent and child, of benefactor and recipient, of husband and wife, of brother and brother, citizen and citizen, citizen and magistrate, and a thousand others.

"Now, it seems to me, that, as soon as a human being comprehends the relation in which two human beings stand to each other, there arises in his mind a consciousness of moral obligation, connected, by our Creator, with the very conception of this relation. And the fact is the same, whether he be one of the parties or not. The nature of this feeling is, that the one *ought* to exercise certain dispositions towards the others to whom he is thus related: and to act towards them in a manner corresponding with those dispositions."—*Wayland's Elements of Moral Science.*

2. Logic will teach us to observe the foundation of the distinctions between moral good and evil.

"All the systems we have examined may, I conceive, be referred to six distinct heads. 1st, The eternal and immutable nature of all moral distinctions. 2d, That utility, public or private, is the foundation of moral obligation. 3d, That all morality is founded upon the will of God. 4th, That a moral sense, feeling, or emotion, is the ground of virtue. 5th, That it is by supposing ourselves in the situation of others, or by a species of sympathetic mechanism, that we derive our notions of good and evil. And 6th, The doctrine of vibrations, and the association of ideas.

"Those whose doctrine is mainly founded upon the first principle,—that of the eternal and immutable nature of all moral distinctions.—are Dr. Cudworth and Mr. John Locke; Bishop Cumberland, who adopts, however, this principle with more qualification than several others; Mr. Wollaston, by his fitness of things; and Dr. Clarke, by his truth of things; Dr. Price, Mr. Gisborne, and Dr. Dewar.

"Those writers who ground their theories upon the doctrine of utility, or, as it is sometimes termed, the selfish system, are rather numerous. Mr. Hobbes is the first on the list. Mr. Stewart remarks, that there is in point of principle a far more close and intimate connexion between the opinions of this writer and Mr. Hume, and others of this school, than what has commonly been imagined; and this remark is perfectly correct. Mr. Hume himself is at the head of this philosophical party. Mandeville's Fable of the Bees, is, though in a caricaturist's dress, bottomed on the same views of human nature. Pope and Bolingbroke take the universal weal as the standard of morals. Mr. Rutherford considers the advantages which the Scriptures

hold out to those who practise virtue, as the ultimate end of it. Paley's system is well known as grounded on the general good. Godwin's Political Justice, and Mr. Bentham's system, are founded upon the same principle.

"Archbishop King stands alone in maintaining that the will of God is the sole foundation of virtue; if we except Dr. Paley, who has coupled this principle with the system of expediency.

"Those who are advocates for a *Moral Sense*, are Shaftesbury, Bishop Butler, Dr. Hutcheson, Lord Kames, Professor Stewart, and Dr. Thomas Brown. Dr. Cogan's views seem grounded on the same views.

"Dr. Adam Smith's work on Moral Sentiments is the only one which is grounded solely on the principle of sympathy.

"Dr. Priestly and Dr. Hartley are the only two writers who maintain that the Association of Ideas is the ground of good and evil.

"There are none of these different systems that are not in some degree founded on truth; but the great imperfection which runs through them all is, that they attempt to generalise too much. We cannot resolve all the moral feelings and habits of our nature into one general principle."—*Blakey's History of Moral Science.*

3. Logic will teach us a proper mode of classification with regard to those actions or motives that are morally good or evil.

"Virtue has been divided by some into *benevolence, prudence, fortitude*, and *temperance*. Benevolence proposes good ends; prudence suggests the best means of attaining them; fortitude enables us to encounter the difficulties, dangers, and discouragements, which stand in our way in the pursuit of these ends; temperance repels and overcomes the passions that obstruct it. Benevolence, for instance, prompts us to undertake the cause of an oppressed orphan; prudence suggests the best means of going about it; fortitude enables us to confront the danger, and bears up against the loss, disgrace, or repulse, that may attend our undertaking; and temperance keeps under the love of money, of ease, or amusement, which might divert us from it.

"Virtue is distinguished by others into two branches only,—prudence and benevolence; prudence, attentive to our own interest; benevolence, to that of our fellow-creatures: both directed to the same end, the increase of happiness in nature; and taking equal concern in the future as in the present.

"The four *cardinal* virtues are,—prudence, fortitude, temperance, and justice.

"But the division of virtue, to which we are now-a-days most accustomed, is into duties:—

"Towards God; as piety; reverence, resignation, gratitude, &c.

"Towards other men (or relative duties); as justice, charity, loyalty, &c.

"Towards ourselves; as chastity, sobriety, temperance, preservation of life, care of health, &c."—*Paley's Moral Philosophy.*

"*Question.* What is thy duty towards God?

"*Answer.* My duty towards God, is to believe in him, to fear him, and to love him with all my heart, with all my mind, with all my soul, and with all my strength; to worship him, to give him thanks, to put my whole trust in him, to call upon him, to honour his holy Name and his Word, and to serve him truly all the days of my life.

"*Question.* What is thy duty towards thy Neighbour?

"*Answer.* My duty towards my Neighbour, is to love him as myself, and to do to all men, as I would they should do unto me: To love, honour, and succour my father and mother: To honour and obey the Queen, and all that are put in authority under her: To submit myself to all my governours, teachers, spiritual pastors and masters: To order myself lowly and reverently to all my betters: To hurt no body by word nor deed: To be true and just in all my dealing: To bear no malice nor hatred in my heart: To keep my hands from picking and stealing, and my tongue from evil-speaking, lying, and slandering: To keep my body in temperance, soberness, and chastity: Not to covet nor desire other men's goods; but to learn and labour truly to get mine own living, and to do my duty in that state of life, unto which it shall please God to call me."—*Church Catechism.*

4. Logic will teach us to notice the different species of any particular virtue or vice.

"*Question.* What is forbidden in the Eighth Commandment?

"*Answer.* The Eighth Commandment forbiddeth whatsoever doth or may unjustly hinder our own or our neighbour's wealth or outward estate.

"*Q.* How may we be said to steal from OURSELVES?

"*A.* By idleness, niggardliness, and prodigality.

"*Q.* How many ways may persons be said to steal from others, *or unjustly hinder their neighbour's wealth or outward estate?*

"*A.* Several ways; particularly by theft, robbery, resetting, defrauding, monopolizing, and taking unlawful usury."—*Assembly's Shorter Catechism explained by James Fisher.*

"A merchant should be an honourable man. Although a man cannot be an honourable man without being an honest man, yet

a man may be strictly honest without being honourable. Honesty refers to pecuniary affairs; honour refers to the principles and feelings. You may pay your debts punctually, you may defraud no man, and yet you may act dishonourably. You act dishonourably when you give your correspondents a worse opinion of your rivals in trade than you know they deserve. You act dishonourably when you sell your commodities at less than their real value, in order to get away your neighbour's customers. You act dishonourably when you purchase at higher than the market price, in order that you may raise the market upon another buyer. You act dishonourably when you draw accommodation bills, and pass them to your banker for discount, as if they rose out of real transactions. You act dishonourably in every case wherein your external conduct is at variance with your real opinions. You act dishonourably if, when carrying on a prosperous trade, you do not allow your servants and assistants, through whose exertions you obtain your success, to participate in your prosperity. You act dishonourably if, after you have become rich, you are unmindful of the favours you received when you were poor. In all these cases there may be no intentional fraud. It may not be dishonest, but it is dishonourable conduct."—*Lectures on Ancient Commerce.*

5. Logic will teach us to investigate the causes and consequences of virtues and vices, and the various circumstances by which they may be attended.

"The children of drunkards are, in general, neither numerous nor healthy. From the general defect of vital power in the parental system, they are apt to be puny and emaciated, and more than ordinarily liable to inherit all the diseases of those from whom they are sprung On this account, the chances of long life are much diminished among the children of such parents. In proof of this, it is only necessary to remark, that according to the London bills of mortality, one-half of the children born in the metropolis die before attaining their third year: while, of the children of the Society of Friends, a class remarkable for sobriety and regularity of all kinds, one-half actually attain the age of forty-seven years. Much of this difference, doubtless, originates in the superior degree of comfort, and correct general habits of the Quakers, which incline them to bestow every care in the rearing of their offspring, and put it in their power to obtain the means of combating disease; but the main-spring of this superior comfort and regularity is doubtless temperance—a virtue which this class of people possess in an eminent degree."

"The effect of intemperance in shortening life is strikingly exemplified in the contrast afforded by other classes of society to

the Quakers, a set of people of whom I must again speak favourably. It appears from accurate calculation, that in London only one person in forty attains the age of fourscore, while among the Quakers, whose sobriety is proverbial, and who have long set themselves against the use of ardent spirits, not less than one in ten reaches that age—a most striking difference, and one which carries its own inference along with it.

"It is remarked by an eminent practitioner, that of more than a hundred men in a glass manufactory, three drank nothing but water, and these three appeared to be of their proper age, while the rest who indulged in strong drinks seemed ten or twelve years older than they proved to be. This is conclusive."—*Macnish's Anatomy of Drunkenness.*

6. Logic will teach us how to apply general principles to particular acts. These may be classes of actions,—as war, duelling, suicide, bribery, &c., or the acts of individuals either in their public or their private capacity.

"Having very great respect for the episcopal order, we are the more anxious to ascertain whether the words attributed to the Right Reverend the Bishop of * * * * at the dinner of the German Hospital on the 7th instant, can possibly be true. We find them thus reported in the *Times* of yesterday:—

"'On the Chevalier BUNSEN giving his health, "the right reverend prelate, in returning thanks for himself and *the clergy*, spoke with great force, and with a sincere conviction, on the benefits which were likely to accrue to English charitable institutions by the introduction into them of *Protestant* Sisters of Mercy. He had often *admired* the Roman Catholic Sisters of Mercy. He was free to confess, widely as he differed from the followers of that persuasion, he *honoured* and *respected* a Roman Catholic if he was *sincere* in his religion—(Enthusiastic cheers)."'

"Now, the point on which we at present wish to be satisfied is whether the bishop actually conceives, and has ventured to assert, that men guilty of false doctrines and unscriptural practices are deserving of honour and respect on account of their *sincerity* in believing. The Protestant Church pronounces, unhesitatingly, the peculiar doctrines and practices of Popery 'to be idolatrous and superstitious;' the Bishop of * * * * * has, we presume, sworn the same. The Papist worships the Virgin Mary, pays adoration to images, and asserts that the priest has the power of making flour and water into the 'body, soul, and substance' of Christ. We ask, is a believer in those dreadful and long-condemned errors to be honoured and respected—for his blindness, his ignorance, or his wilful perversion of the Scripture? Let the principle be once established,

that sincerity in antagonism to religious truth deserves honour and respect, and where can it stop? The Mahometan is perhaps sincere in believing Mahomet to be 'the prophet of God;' the Brahmin is equally sincere in bowing down to Juggernaut, or the African in worshipping the devil. Are they to be 'honoured and respected' for the sincerity of their abomination? The ancient worshippers of heathenism were probably as sincere as the Papist when they bowed down to Mars or Venus, and with the same grounds for their sincerity, namely, their *not* taking the trouble to use their common sense; the guilt of the Papist being increased by his opportunities of knowing the gospel. Even in general life, the principle of allowing sincerity to wash away guilt would give a latitude to every crime. The Irish peasant makes up his mind that his landlord demands too high a rent, and that, therefore, he has a right to rob him, and he robs him accordingly. He thinks that he has a right to shoot him, and he shoots him in the spirit of sincerity. The foreign rebel is often perfectly sincere in the right to rebel, and he proceeds, therefore, to wholesale massacre without compunction. Such must be the fruits of 'honouring and respecting' sincerity, merely because the subject of the guilt *asserts* that he is sincere; for his assertion is all that man can have on the matter. We trust that his lordship will condescend to explain."—*Britannia.*

Moral philosophy, in a large sense, includes polity, or the conduct of nations both in the arrangement of their internal affairs and in their transactions with each other. In a still more enlarged sense, it includes also natural and revealed religion. Moral philosophy is more or less associated with almost every subject of discussion. In Knight's Half Hours there is a sermon of Dean Swift's on the moral defects of the ancient philosophers; Mr. Gilbart, in his Treatise on Banking, has a section on the moral and religious duties of public companies; and Mr. Taylor has introduced into his Statesman a chapter on the ethics of politics, and another on the conscience of a statesman.

SECTION VI.

THE APPLICATION OF THE ART OF REASONING TO THE FORMATION OF HABITS OF REASONING.

THE object of all rules is the formation of habits. Habits can be formed only by repeated acts. The rules direct how the act should be performed. The repetition of the act produces the habit. And when the habit is fixed there is no further occasion for rules. But practice is still necessary in order to confirm and strengthen the habit.

1. To form a habit of reasoning, take care of your health.

The possessing of health seems essential to independence of mind. 'Tis those who have a weakly constitution who are led astray by the persuasion of others. The means that promote health—as temperance, early rising, and exercise in the open air, tend also to produce clearness and cheerfulness of mind. Do not let the love of reading lead you to sit up late, or deprive you of proper rest and exercise. Literary knowledge, valuable as it is, is but a poor compensation for the loss of health. If you are one of the million, one who has employment to attend to during the day, do not in the evenings engage in those studies that require strong or continuous mental application, such as Greek, Latin, Mathematics, Chemistry, &c.; but rather direct your attention to those sciences which combine amusement with instruction, and the knowledge of which can be obtained with a moderate degree of application.

2. To form a habit of reasoning, attend to the health of your mind.

Do not exercise any one faculty unduly. Do not indulge the imagination. Read no novels, and but little poetry. Do not overload the memory. Think as well as read; but do not think intensely on any one subject; the reasoning powers then become distracted and enfeebled.

"A quickness of mental perception, a lively and vigorous imagination, and a ready and retentive memory, are highly useful and ornamental qualities; but they are individually limited in their beneficial influence. The reasoning power, however, is of vital use. It is the corner-stone of the intellectual building, giving grace and strength to the whole structure; without it all the other faculties of the soul would be of little or no utility. All the differences in the mental qualifications of men may be traced to the various degrees of original strength in this quality of the mind, or to the successful manner in which it has been cultivated and improved."—*Blakey's Essay on Logic.*

In order to improve yourself in Logic, I would advise you to avoid, especially in your youth, discussions on those abstract principles of morals and metaphysics, which in every age of the world have puzzled, and which continue to puzzle, the most profound philosophers. Limit your inquiries and investigations to those things respecting which you may hope to arrive at some satisfactory conclusion, and which are also capable of some useful practical application. The absorption of the mind in mysticism tends to impair both the faculty of perception, and the power of reasoning. I would also advise you to avoid reading books written in an obscure or affected style. Such writings tend to injure the perceptive faculty, and to familiarize the mind with obscure ideas, or with ideas obscurely expressed. Read those works which are remarkable for profound reasoning and clear expression. Read with a pencil in your hand, and mark those paragraphs that contain any examples of clear and beautiful reasoning. If the newspapers you read are your own, cut out with a penknife all the good pieces of argumentation you may find, and after a while read them over again, and classify them according to the principles or forms of reasoning they can be employed to illustrate.

3. To form a habit of reasoning, associate your reasonings with your daily avocations.

Don't imagine that the great end of the art of reasoning is to enable you to refute or to instruct other people. Its chief end is to enable you to teach yourself. "Logic," says Dr. Watts, "is the art of using our reason well in the search after truth and in the communication of it to others."

But don't fancy that "to search after truth," means nothing more than reading books, or what is called study. You will find that your daily duties, your own reflections, and the conduct of mankind around you, will supply you with truths quite as interesting and as important as any that you will meet with in books. Think on these. Before performing any action, ask yourself what are the reasons for doing it, and then ask what are the reasons for not doing it. When you have acquired the habit of thus reasoning on your own actions, you will soon learn to apply the same mode of reasoning to the actions of other people.

We never hear any one praised for being a good logician. The fact is, that when a man reasons well, he is famed not for his knowledge of logic but for his knowledge of the art to which his logic is applied. When a lawyer reasons well, he is celebrated not as a good logician, but as a good lawyer. The late Sir William Follett owed much of his celebrity to the beautiful clearness of his reasoning. It is the same in every other profession. If a tradesman reasons well when talking with his customers, he is never suspected of being skilled in logic, but, what is of more importance, he gets the character of being a good tradesman. And if a man reasons well upon "matters in general," he is reckoned a sensible man. Never boast of your logic. A reputation as a logician will damage the effect of your reasonings. Your opponent may fancy that his inability to answer your arguments arises, not from the weakness of his cause, but from your superior skill as a disputant.

4. To form a habit of reasoning, rather divide your reading and studies among a variety of subjects, than confine yourself to one subject.

Try to be distinguished in your profession, but do not be *distinguished* in any thing else. If so, those engaged in the same profession will detract from your professional reputation, by praising you for other attainments. You had better divide your unprofessional reading and studies among a good many subjects, rather than confine them to one. This will afford you more pleasure, impose less mental labour, and give a more lively exercise to your powers of reasoning. You will get the character of being

a well-informed man, and awaken no envy by any special kind of superiority. Lord Bacon was a great lawyer, but he was also a great philosopher. And because he was a philosopher, he was supposed to be no lawyer. This opinion was entertained even by his distinguished contemporaries, the Minister Cecil, and the Attorney General, Coke. Disraeli observes, that "both were mere practical men of business, whose narrow conceptions, and whose stubborn habits, assume that whenever a man acquires much knowledge foreign to his profession, he will have less of professional knowledge than he ought."

Beyond your profession, then, it is better you should know a little about a good many things, than know a great deal about some one thing. This will give a more expansive character to your mind, and greater variety to the exercise of your reasoning powers. Get, therefore, a general acquaintance with every branch of knowledge. You will find that the sciences to which I have more especially directed your attention, History, Political Economy, Statistics, and Moral Philosophy, will supply you with an inexhaustible fund of topics, about which you will have occasion to reason. They can be studied without any expensive apparatus—without any knowledge of Latin or Greek—and they refer to matters of the highest importance, as well as to the affairs of every-day life. The lessons they teach will enable you both to judge of the conduct of nations and to regulate your own. These sciences are strictly logical sciences. The physical and mathematical sciences will not, so far as you are concerned, call for the same exercise of your reasoning powers. The knowledge of the physical sciences is acquired by observation and experience, and imparted by writing or conversation. Here there is little ground for reasoning. All that is known is certain and cannot be disputed. What is unknown does not afford sufficient evidence for the formation of opinions. In Botany, Natural History, Geography, Geology, and the other Physical Sciences, all we have to do is to listen and learn. Mathematics is all severe reasoning, but the practical application is mere routine. We learn cyphering at school mechanically. We add, subtract, multiply and divide. We learn fractions

and decimals, and know how to extract the square and cube roots, all by rule. Nor can it be denied, that all these operations may be performed very well without any knowledge of the scientific principles on which they are founded. The higher branches of mathematics and their application to Geometry, Astronomy, Navigation, &c, require great exertions of the reasoning powers, and eminence is rarely attained in this kind of knowledge but by the devotion of the whole time to its pursuit. Happily, however, this high degree of knowledge is not necessary to every member of the community. If you are acquainted with Arithmetic, understand simple equations in Algebra, and know how to use a Table of Logarithms, you have as much knowledge of Mathematics as you are likely to require in the ordinary business of life, and this will not tax very heavily your powers of reasoning.

It has often been asserted that a familiarity with mathematical reasoning unfits the mind for proficiency in moral reasoning. I have never seen any evidence that has convinced me of the soundness of this opinion. No doubt, a man will enter more readily upon that kind of reasoning with which he is most familiar. A professor of mathematics may reason well on mathematics, and badly on morals, simply because he is accustomed to one kind of reasoning and not accustomed to the other. This affords no evidence that his capacity for moral reasoning has been impaired by his study of mathematics. It appears to me more rational to suppose, that the discipline imparted to the mind by mathematical studies, tends to give increased precision and energy to all the other operations in which it may engage. At the same time, in passing through life, you will find that a dexterity in performing the operations of Arithmetic will be of more use to you than a knowledge of the abstract principles on which these operations are founded. Sam Slick says, "If you wish to go a-head, there's nothing like cyphering."

5. To form a habit of reasoning, you must keep yourself in practice.

One way of doing this is frequently to review all your opinions, and examine the arguments by which they are

supported, and the objections to which they are exposed. Do not take your opinions in clusters upon the authority of the party or body to which you belong. Examine them one by one for yourself, and be at all times prepared to render a reason for any doctrine that forms an article in either your political or your religious creed. Read occasionally those books or newspapers that contain attacks upon the sentiments you hold, and think to yourself what you would say in case you were called upon to reply to those attacks. Take a parliamentary speech, for instance, and fancy how you would reply to it. In cases of actual contest attack the most able man of his party. You pay yourself a poor compliment by selecting a weak opponent. It is by wrestling with superior minds that we increase our own strength. In logical disputation, as in social life, no honour can be gained by quarrels with inferiors. You should engage only in those contests in which victory is attended with renown.

Many of our most distinguished men have in their youth been members of debating societies. We have in former days met at such societies men of high talent, who have rendered, and are still rendering good service to their country and to the world. These associations possess the same advantages and are liable to the same objections that are pointed out by Dr. Watts in regard to scholastic disputations. (See page 306.) I believe that societies formed for the sole purpose of debate are not so numerous as formerly, but most of our literary and scientific institutions have a "discussion class," which answers the same purpose. I advise you to join this class. Institutions that are adapted to make wise men wiser should not be laid aside merely because in some instances they may do injury to men who are not wise. If you have a talent for speaking, by all means cultivate it, but do not fancy that a fluent speaker is necessarily a good logician. Study your speeches beforehand, and arrange your thoughts under one, two, or three heads, but do not write them out. Guard against dogmatism on the one hand, and scepticism on the other. Discuss only those questions on which there can be a reasonable difference of opinion. Never attempt to prove a doctrine that is transparently true, nor to refute

a doctrine that is transparently absurd; and never, even to get up a debate, argue in favour of any doctrine that you do not honestly believe. At the close of every debate, sum up in your own mind the arguments that have been advanced on both sides of the question that has been discussed, and then form, correct, or confirm your own opinion.

On this subject, I will quote from Mr. John Mottram's "Institutional Education." This essay obtained the prize offered to its members by the City of London Literary and Scientific Institution, for the best essay on "The Characteristics and Advantages of Literary and Scientific Institutions; their claims to the support of society; and the best means of extending their usefulness."

"It is a good thing for a man that he should bring his opinion into occasional conflict with those of other men; that he should regard those opinions from other points of view than what his own mind can furnish of itself; that he should look upon them as others look upon them; and either be strengthened in his own impressions, or suffer those impressions to pass away; in either case becoming mentally and morally advantaged. And this has its practical advantages in our daily life. It is necessary for a man that he should be prepared to take part in the conflict of opinion that is constantly going on in the world; and these occasional argumentative contests prepare him for this work."

"The power of accustoming ourselves to discuss the opinions of others, becomes a habit of the greatest advantage to society; it prevents the taking upon trust new opinions, or the pinning our faith to any, however prevalent they may be; and it promotes that spirit of inquiry into the rationality of an opinion that must tend very considerably to augment the predominance of truth among men, and to aid on their progress. The man who feels the power within himself which frequent discussion upon all matters moral and political will give him—who appreciates the much higher character of this power over other modes of influencing men's minds—will not be the man to apply to the legislature of his country for acts to coerce the opinions of his fellow-man, or to legalise and support his own views, by this course seeking to bring discredit and ruin upon the opinions of others; nor will he be the man to raise the standard of rebellion, making violence the arbitrator between truth and error; but ever struggling on, eager in the promulgation of his convictions, ever preparing and ever using the weapons mind places at his disposal, he will in this way, and in no other, seek to make *his* opinions prevail around him. These Institutions, in affording scope for the

necessary inquiries, and for the preparation necessary to the culture of this reliance upon the power of argument, and the continual progress of truth, put forward great claims to the support and attention of society. They are the schools, and they might be made more effectual schools, for the preparation required for taking part in the active duties and struggles of the world. Within their walls there is much of the information, order, and propriety of arrangements acquired, which fit a man for taking part in public business, to the advantage of the society of which he is a member."—*Institutional Education.*

6. To form a habit of reasoning, attend to the discipline of your own mind with regard to its moral principles and dispositions.

The cultivation of the moral feelings improves the intellectual faculties. A sound heart is less likely to go astray than a clever head. "The entrance of thy words giveth light, it giveth understanding to the simple." On this subject we shall be content to quote from two authors —not theologians—who have written on very different subjects.

Mr. Taylor, of the Colonial Office, thus writes in his work entitled "The Statesman:"—

"If there be in the character not only sense and soundness, but virtue of a high order, then, however little appearance there may be of *talent*, a certain portion of *wisdom* may be relied upon almost implicitly. For the correspondencies of wisdom and goodness are manifold; and that they will accompany each other is to be inferred, not only because men's wisdom makes them good, but also because their goodness makes them wise. Questions of right and wrong are a perpetual exercise of the faculties of those who are solicitous as to the right and wrong of what they do and see; and a deep interest of the heart in these questions carries with it a deeper cultivation of the understanding than can be easily effected by any other excitement to intellectual activity. Although, therefore, simple goodness does not imply every sort of wisdom, it unerringly implies some essential conditions of wisdom; it implies a negative on folly, and an exercised judgment within such limits as Nature shall have prescribed to the capacity. And where virtue and extent of capacity are combined, there is implied the highest wisdom, being that which includes the worldly wisdom with the spiritual."—*The Statesman.*

Mr. Blakey, who is now the Professor of Logic and Metaphysics in the Queen's College, Belfast, writes as follows:—

"I am fully convinced that there is a much closer connexion between mental superiority, and a belief in the Scriptures, than is commonly imagined. Sceptical modes of thinking have a direct and natural tendency to beget a captious, quibbling, sophistical habit; to create and foster literary arrogance and conceit; to destroy whatever is candid and ingenuous in controversial warfare; to make the mind diminutive, rickety, and distorted; and to induce men to set a higher value on crotchety sophisms than on the inspirations of real wisdom and science. . . . . On the other hand, where the Scriptures are embraced with that sincerity, heartiness, and singleness of mind, to which their manifest importance so justly entitles them, we will perceive a comprehensiveness, a vigour, and elasticity given to our minds, *which cannot fail to place us on the vantage ground, whatever branch of knowledge we may choose to cultivate,* or to excel in. The mind, no longer groping its way through the hazy and murky atmosphere of doubt and uncertainty, advances with a firm and confident step, under the bright and irradiating influence of the sun of truth. By the contemplation of whatever is grand and sublime in doctrine, and pure and simple in precept, our minds are naturally led, by our established constitution, to spread themselves into a wider compass; to improve their various powers or faculties, by giving them an enlarged sphere of action; to dwell upon what is great, noble, and excellent; to pursue our course with freedom and boldness, unencumbered with babbling sophistries, and cheered with the consolatory reflection, that we are engaged in promoting whatever is esteemed among mankind fair, honourable, and praiseworthy. —*Blakey's History of Moral Science.*

And now, gentle reader, I have finished my book, and I have only one word more to say to you,—

MIND YOU READ THE INDEX.

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